Access DB# 220924

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Carrie Thompson Examiner #: 79244 Date: 4/2/07
Art Unit: 1774 Phone Number 30 571-272-1530 Serial Number: 10/532,027
Mail Box and Bldg/Room Location: Tech 10 D28 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

****

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Material for organic electroluminescence device

Inventors (please provide full names): Eisaku Katoh; Hiroshi Kita; Tomohiro Oshiyama; Mitsuhiro Fukada; Yoshiyuki Suzuri; Noriko Veda

Earliest Priority Filing Date: ~~8/04~~ 4/23/03

**For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

Please do a search on all claims for the pyrrole derivative.

Claims 1-13

especially claims 3 & 4

Thanks.

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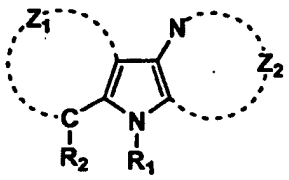
STAFF USE ONLY	Type of Search		Vendors and cost where applicable	
Searcher: EL	NA Sequence (#)		STN	$380.41
Searcher Phone #:	AA Sequence (#)		Dialog	
Searcher Location:	Structure (#)	2 (subsets)	Questel/Orbit	
Date Searcher Picked Up:	Bibliographic	1 (card)	Dr.Link	
Date Completed: 4-10-07	Litigation		Lexis/Nexis	
Searcher Prep & Review Time: 10	Fulltext		Sequence Systems	
Clerical Prep Time:	Patent Family		WWW/Internet	
Online Time: 70	Other		Other (specify)	

PTO-1590 (8-01)

What is claimed is:

1. A pyrrole derivative for an organic electroluminescent element represented by Formula (1), and having a molecular weight of not less than 450:

Formula (1)



wherein:

R_1 represents an alkyl group which may have a substituent, a cycloalkyl group which may have a substituent, an aryl group which may have a substituent or a heterocyclic group which may have a substituent;

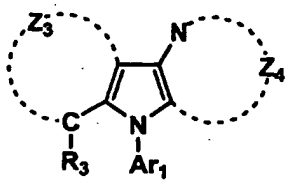
R_2 represents a hydrogen atom or a substituent;

Z_1 represents a group of atoms necessary to form a 5- to 7-membered fused ring combined with two carbon atoms; and

Z_2 represents a group of atoms necessary to form a nitrogen-containing 5- to 7-membered heterocycle combined with a carbon atom and a nitrogen atom.

2. The pyrrole derivative for the organic electroluminescent element of claim 1, wherein the pyrrole derivative is represented by Formula (2):

Formula (2)



wherein:

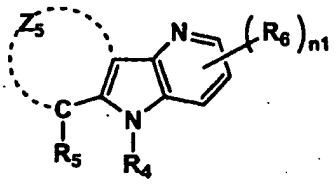
Ar_1 represents an aryl group which may have a substituent, or a heterocyclic group which may have a substituent;

R_3 represents a hydrogen atom or a substituent; and

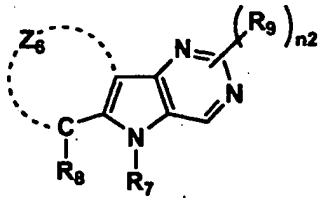
Z_3 and Z_4 each represent a group of atoms necessary to form a 5- to 7-membered fused ring.

3. The pyrrole derivative for the organic electroluminescent element of claim 1, wherein the pyrrole derivative is represented by one of Formulae (3) to (6):

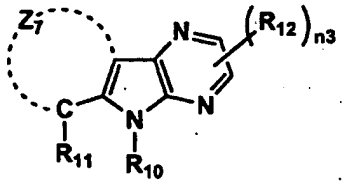
Formula (3)



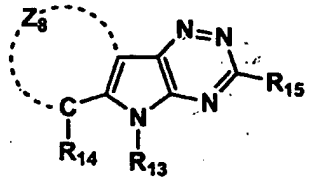
Formula (4)



Formula (5)



Formula (6)



wherein:

R_4, R_7, R_{10} and R_{13} each represent an alkyl group which may have a substituent, a cycloalkyl group which may have a substituent, an aryl group which may have a substituent or a heterocyclic group which may have a substituent;

R_5, R_6, R_8, R_9, R_{11}, R_{12}, R_{14} and R_{15} each represent a substituent;

Z_5 through Z_8 each represent a group of atoms necessary

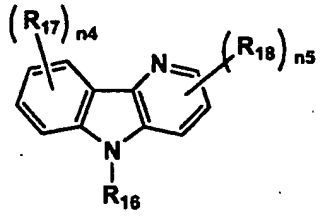
to form a 5- to 7-membered fused ring;

n1 represents an integer of 0 to 3; and

n2 and n3 each represent an integer of 0 to 2.

4. The pyrrole derivative for the organic electroluminescent element of claim 1, wherein the pyrrole derivative is represented by one of Formulae (7) to (10):

Formula (7)



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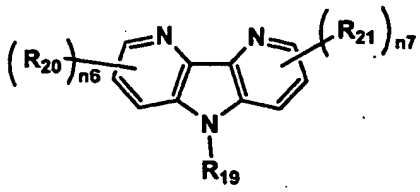
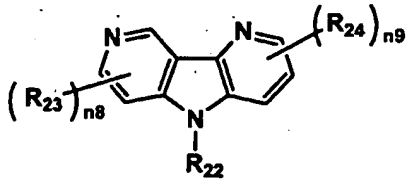


Formula (9)



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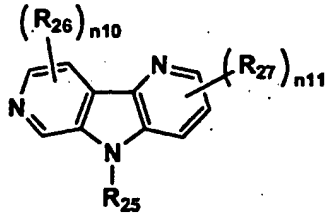


wherein:

R_{16}, R_{19}, R_{22} and R_{25} each represent an alkyl group which may have a substituent, a cycloalkyl group which may have a substituent, an aryl group which may have a substituent or a heterocyclic group which may have a substituent;

R_{17} , R_{18}, R_{20} , R_{21} , R_{23} , R_{24} , R_{26} , and R_{27} each represent a substituent;

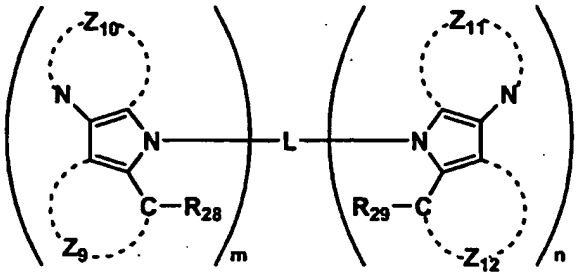
n4 represents an integer of 0 to 4; and

n5 through n11 each represent an integer of 0 to 3.

5. The pyrrole derivative for the organic

electroluminescent element of claim 1, wherein the pyrrole derivative is represented by Formula (11):

Formula (11)



wherein:

R_{28}, and R_{29} each represent a hydrogen atom or a substituent;

Z_9 and Z_{12} each represent a group of atoms necessary to form a 5- to 7-membered fused ring;

Z_{10} and Z_{11} each represent a group of atoms necessary to form a nitrogen-containing 5- to 7-membered heterocycle;

L represents a linking group of divalent through tetravalent; and

m and n each represent an integer of 1 or 2.

6. The material for the organic electroluminescent element of any one of claims 1 to 5, wherein a wavelength giving a fluorescence maximum of the pyrrole derivative represented by Formula (1) or Formula (2) is not more than 500 nm.

7. The organic electroluminescent element comprising a pair of electrodes having therebetween one or more constituting layers, wherein:

at least one of the constituting layers is a light emitting layer;

one of the constituting layers contains the pyrrole derivative for the organic electroluminescent element of any one of claims 1 to 6.

8. The organic electroluminescent element of claim 7, wherein the light emitting layer contains the pyrrole derivative for the organic electroluminescent element.

9. The organic electroluminescent element of claim 7 or claim 8, wherein the constituting layers contain a hole blocking layer containing the pyrrole derivative for the organic electroluminescent element.

10. The organic electroluminescent element of any one of claims 7 to 10, wherein the organic electroluminescent element emits blue light.

11. The organic electroluminescence element of any one of claims 7 to 10, wherein the organic electroluminescent element emits white light.

12. An illuminator comprising the organic electroluminescent element of any one of claims 7 to 11.

13. A display device comprising the organic electroluminescent element of any one of claims 7 to 11.

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USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
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L13             6 S 1840-2003/PY,PRY AND L11
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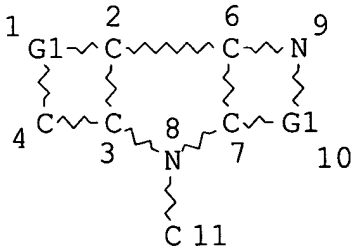


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REP G1=(2-4) A
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NUMBER OF NODES IS 10

STEREO ATTRIBUTES: NONE
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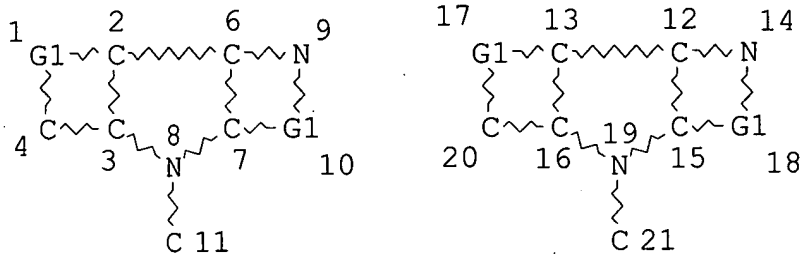

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DEFAULT ECLEVEL IS LIMITED

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100.0% PROCESSED 606 ITERATIONS 283 ANSWERS
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L13 ANSWER 1 OF 6 HCA COPYRIGHT 2007 ACS on STN
142:344890 Organic **electroluminescent** element, illuminator, display and compound. Ueda, Noriko; Yamada, Taketoshi; Kita, Hiroshi; Fukuda, Mitsuhiro (Konica Minolta Holdings, Inc., Japan). U.S. Pat. Appl. Publ. US 2005069729 A1 20050331, 64 pp. (English). CODEN: USXXCO. APPLICATION: US 2004-946499 20040921. PRIORITY: JP 2003-339583 20030930.

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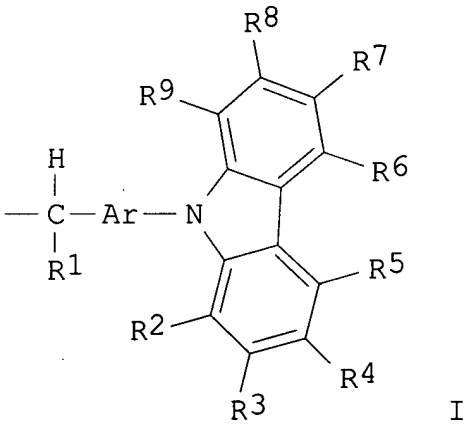

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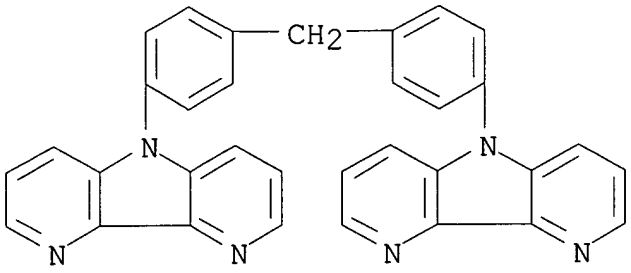
AB The invention refers to an org. **electroluminescent** element comprising a **light emission** layer and a hole blocking layer adjacent to the **light emission** layer, wherein, (i) the **light emission** layer contains a compd. having a specified partial structure I [Ar = aryl or heteroaryl; R2-9 = H, or substituent, and groups may be combined with each other to form a ring; R1 = H, alkyl or cycloalkyl] and having a mol. wt. of ≤1700; and (ii) the hole blocking layer contains a deriv. selected from the group consisting of a styryl deriv., a B deriv. and a carboline deriv.

IT **848724-67-4**
(org. **electroluminescent** contg. carbazole deriv. in emissive layer, and styryl, boron or carboline deriv. in hole blocking layer)

RN 848724-67-4 HCA

CN 5H-Pyrrolo[3,2-b:4,5-b']dipyridine, 5,5'-(methylenedi-4,1-phenylene)bis- (9CI) (CA INDEX NAME)



IC ICM H05B033-12
INCL 428690000; 428917000; 313504000; 313506000; 257088000; 349069000
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
ST **electroluminescent** display device
IT **Electroluminescent** devices
(displays; org. **electroluminescent** contg. carbazole deriv. in emissive layer, and styryl, boron or carboline deriv. in hole blocking layer)
IT **Luminescent** screens
(**electroluminescent; org. electroluminescent** contg. carbazole deriv. in emissive layer, and styryl, boron or carboline deriv. in hole blocking layer)
IT **Electroluminescent** devices
(org. **electroluminescent** contg. carbazole deriv. in emissive layer, and styryl, boron or carboline deriv. in hole blocking layer)
IT 135804-06-7 142289-08-5 156645-72-6 492446-89-6 492446-97-6
787582-73-4 848724-46-9 848724-47-0 848724-48-1 848724-49-2
848724-50-5 848724-51-6 848724-52-7 848724-53-8 848724-54-9
848724-55-0 848724-56-1 848724-57-2 848724-58-3 848724-59-4
848724-60-7 848724-61-8 848724-62-9 848724-63-0 848724-64-1
848724-65-2 848724-66-3 **848724-67-4**
(org. **electroluminescent** contg. carbazole deriv. in emissive layer, and styryl, boron or carboline deriv. in hole blocking layer)

L13 ANSWER 2 OF 6 HCA COPYRIGHT 2007 ACS on STN
142:45702 Organic **electroluminescent** device for illumination and display devices. Fukuda, Mitsuhiro; Kita, Hiroshi (Konica Minolta Holdings, Inc., Japan). Jpn. Kokai Tokkyo Koho JP 2004355898 A 20041216, 70 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2003-150762 20030528.
AB The invention relates to an org. **electroluminescent** device, suited for use in making illumination and display devices, comprising a metal complex having ligands contg. electron

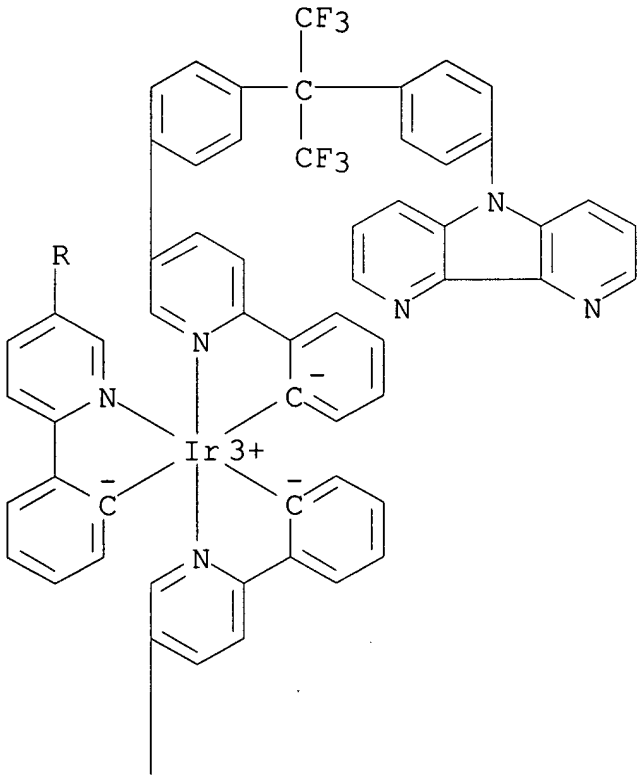
transporting groups.

IT **807360-66-3**
(org. **electroluminescent** device for illumination and display devices)

RN 807360-66-3 HCA

CN Iridium, tris[2-[5-[4-[2,2,2-trifluoro-1-[4-(5H-pyrrolo[3,2-b:4,5-b']dipyridin-5-yl)phenyl]-1-(trifluoromethyl)ethyl]phenyl]-2-pyridinyl-κN]phenyl-κC]- (9CI) (CA INDEX NAME)

PAGE 1-A



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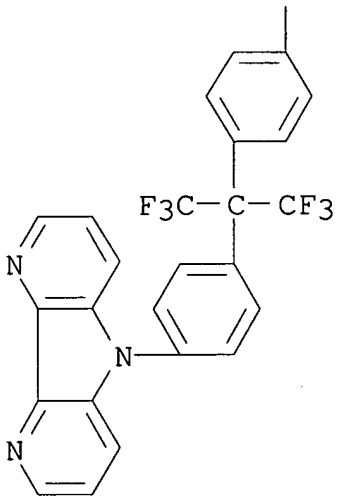

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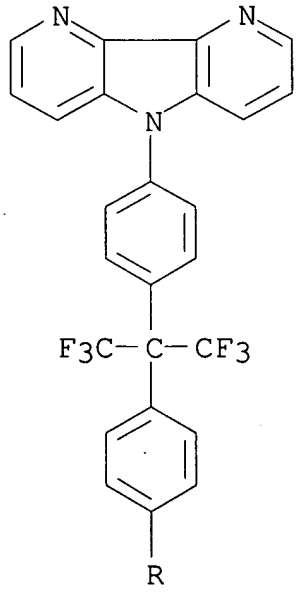

IC ICM H05B033-14
ICS C09K011-06; G02F001-1335

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 74

ST org **electroluminescent** device illumination display electron transporting material

IT **Electroluminescent** devices
Optical imaging devices
Phosphorescent substances
(org. **electroluminescent** device for illumination and display devices)

IT Coordination compounds
(org. **electroluminescent** device for illumination and display devices)

IT 693794-98-8 807360-63-0 **807360-66-3** 807360-69-6 807360-72-1
(org. **electroluminescent** device for illumination and display devices)

L13 ANSWER 3 OF 6 HCA COPYRIGHT 2007 ACS on STN
141:403603 Material for organic **electroluminescent** device, organic **electroluminescent** device, illuminating device and display. Katoh, Eisaku; Kita, Hiroshi; Oshiyama, Tomohiro; Fukuda, Mitsuhiro; Suzuri, Yoshiyuki; Ueda, Noriko (Konica Minolta Holdings, Inc., Japan). PCT Int. Appl. WO 2004095891 A1 20041104, 82 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (Japanese). CODEN: PIXXD2. APPLICATION: WO 2004-JP5621 20040420. PRIORITY: JP 2003-117886 20030423; JP 2004-15487 20040123.

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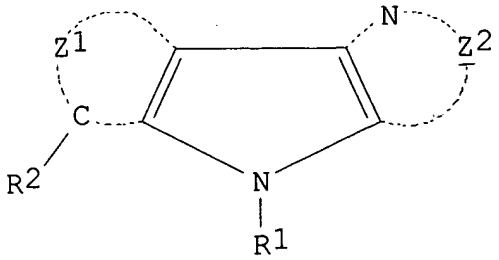

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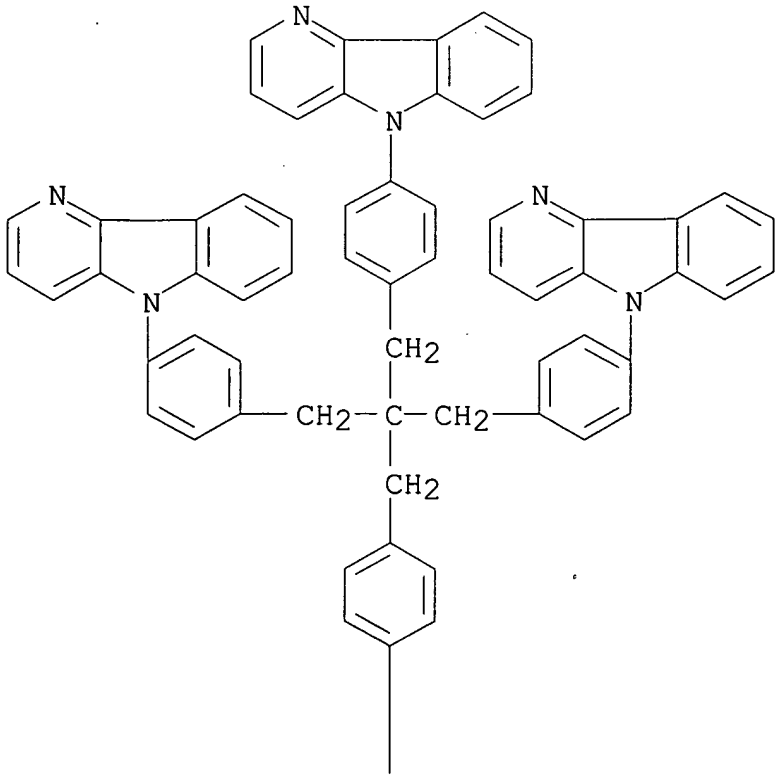
AB An org. **EL** (**electroluminescent**) device is disclosed which has excellent characteristics such as high luminous efficiency, good external quantum efficiency, and long driving duration in case where it is driven at a high temp. of 50°. An illuminating device and a display using such an org. **EL** device are also disclosed. A pyrrole material, represented by I [R1 = (substituted) alkyl, (substituted) cycloalkyl, (substituted) aryl, (substituted) heterocyclyl; R2 = H, substituent; Z1 = at. group for forming 5- to 7-membered ring structure; Z2 = at. group for forming 5- to 7-membered N-contg. heterocycle], for org. **EL** devices which can be preferably used for such an org. **EL** device is further disclosed.

IT **787578-15-8 787578-33-0**
(pyrrole material for org. **electroluminescent** device, org. **electroluminescent** device, illuminating device and display showing high luminous efficiency, good external quantum efficiency, and long driving duration)

RN 787578-15-8 HCA

CN 5H-Pyrido[3,2-b]indole, 5,5'-[[2,2-bis[[4-(5H-pyrido[3,2-b]indol-5-yl)phenyl]methyl]-1,3-propanediyl]di-4,1-phenylene]bis- (9CI) (CA INDEX NAME)

PAGE 1-A



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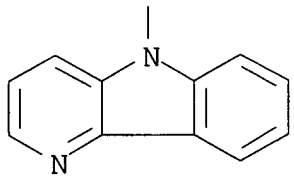
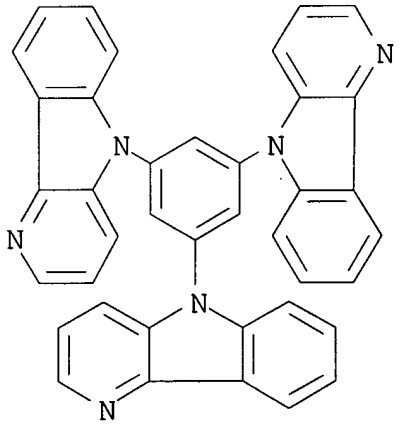
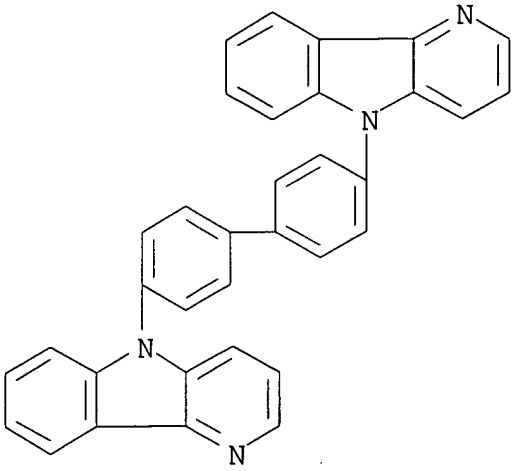


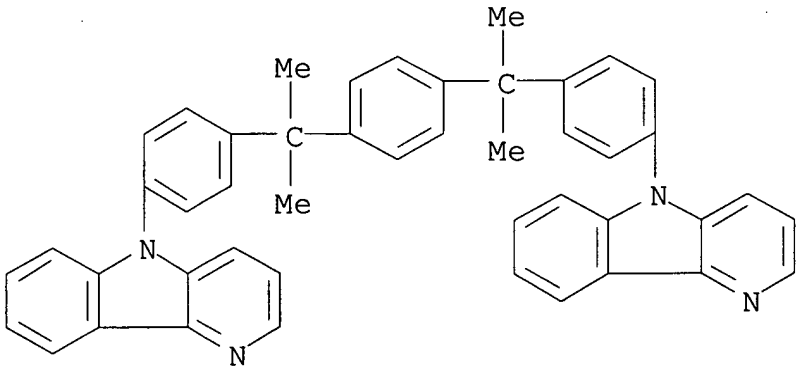
RN 787578-33-0 HCA
CN 5H-Pyrido[3,2-b]indole, 5,5',5''-(1,3,5-benzenetriyl)tris- (9CI) (CA INDEX NAME)



IT **787577-80-4P 787578-21-6P**
(pyrrole material for org. **electroluminescent** device, org. **electroluminescent** device, illuminating device and display showing high luminous efficiency, good external quantum efficiency, and long driving duration)
RN 787577-80-4 HCA
CN 5H-Pyrido[3,2-b]indole, 5,5'-[1,1'-biphenyl]-4,4'-diylbis- (9CI) (CA INDEX NAME)



RN 787578-21-6 HCA
CN 5H-Pyrido[3,2-b]indole, 5,5'-[1,4-phenylenebis[(1-methylethylidene)-4,1-phenylene]]bis- (9CI) (CA INDEX NAME)



IC ICM H05B033-22
CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 73
ST **electroluminescent** display org pyrrole material illuminating device
IT **Electroluminescent** devices
(displays; pyrrole material for org. **electroluminescent** device, org. **electroluminescent** device, illuminating device and display showing high luminous efficiency, good external quantum efficiency, and long driving duration)
IT Luminescent screens
Luminescent substances
(**electroluminescent**; pyrrole material for org.

electroluminescent device, org. **electroluminescent** device, illuminating device and display showing high luminous efficiency, good external quantum efficiency, and long driving duration)

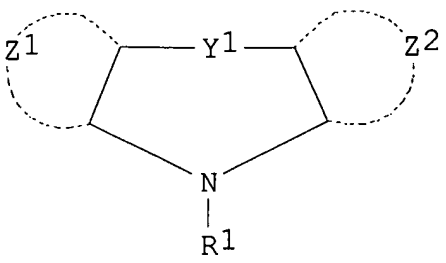
IT 787577-90-6 **787578-15-8 787578-33-0**
(pyrrole material for org. **electroluminescent** device, org. **electroluminescent** device, illuminating device and display showing high luminous efficiency, good external quantum efficiency, and long driving duration)

IT **787577-80-4P 787578-21-6P**
(pyrrole material for org. **electroluminescent** device, org. **electroluminescent** device, illuminating device and display showing high luminous efficiency, good external quantum efficiency, and long driving duration)

IT 245-08-9, δ-Carboline 3001-15-8, 4,4'-Diiodobiphenyl 787578-41-0
(pyrrole material prepn.; pyrrole material for org. **electroluminescent** device, org. **electroluminescent** device, illuminating device and display showing high luminous efficiency, good external quantum efficiency, and long driving duration)

L13 ANSWER 4 OF 6 HCA COPYRIGHT 2007 ACS on STN
141:403602 Material for organic **electroluminescent** device, organic **electroluminescent** device, illuminating device and display. Katoh, Eisaku; Kita, Hiroshi; Oshiyama, Tomohiro; Fukuda, Mitsuhiro; Suzuri, Yoshiyuki; Ueda, Noriko (Konica Minolta Holdings, Inc., Japan). PCT Int. Appl. WO 2004095890 A1 20041104, 90 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (Japanese). CODEN: PIXXD2. APPLICATION: WO 2004-JP5616 20040420. PRIORITY: JP 2003-117886 20030423; JP 2004-15487 20040123.

GI



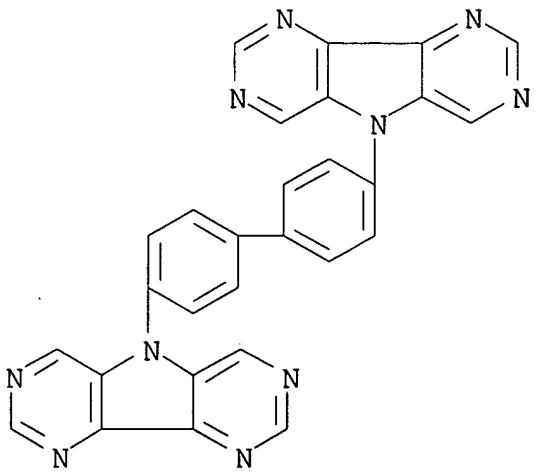
I

AB A material for org. **electroluminescent** devices and a novel compd. are disclosed which enable to obtain an org. **electroluminescent** device, an illuminating device and a display having high luminous efficiency and long life. This material for org. **electroluminescent** devices is characterized by being a compd. which has a mol. wt. of ≥450 and is represented by the following general formula I [R1 = (substituted) alkyl, (substituted) cycloalkyl, (substituted) aryl, (substituted) heterocyclyl; Z1, Z2 = at. group necessary for forming 5- to 7-membered N-contg. arom. heterocyclic ring structure; Y1 = divalent linking group, single bond].

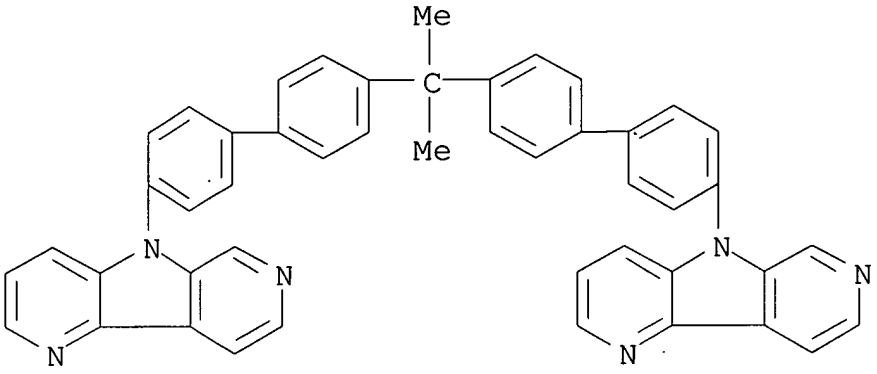
IT **787578-25-0 787578-27-2**
(material for org. **electroluminescent** device, org. **electroluminescent** device, illuminating device and display showing high luminous efficiency and long life)

RN 787578-25-0 HCA

CN 5H-Pyrrolo[3,2-d:4,5-d']dipyrimidine, 5,5'-[1,1'-biphenyl]-4,4'-diylbis- (9CI) (CA INDEX NAME)



RN 787578-27-2 HCA
CN 5H-Pyrrolo[2,3-b:5,4-c']dipyridine, 5,5'-[(1-methylethylidene)bis([1,1'-biphenyl]-4',4-diyl)]bis- (9CI) (CA INDEX NAME)

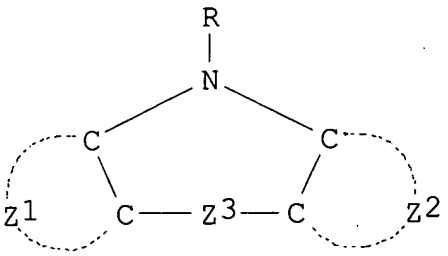


IC ICM H05B033-22
CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 73
ST org **electroluminescent** display **electroluminescence** material illuminating device
IT **Electroluminescent** devices
(displays; material for org. **electroluminescent** device, org. **electroluminescent** device, illuminating device and display showing high luminous efficiency and long life)
IT Luminescent screens
Luminescent substances
(**electroluminescent**; material for org. **electroluminescent** device, org. **electroluminescent** device, illuminating device and display showing high luminous efficiency and long life)
IT 787577-86-0 **787578-25-0 787578-27-2**
787578-29-4
(material for org. **electroluminescent** device, org. **electroluminescent** device, illuminating device and display showing high luminous efficiency and long life)
IT 787577-64-4P
(material for org. **electroluminescent** device, org. **electroluminescent** device, illuminating device and display showing high luminous efficiency and long life)
IT 531-85-1, Benzidine dihydrochloride 2716-10-1 27353-36-2
(material prepn.; material for org. **electroluminescent** device, org. **electroluminescent** device, illuminating device and display showing high luminous efficiency and long life)

IT 787582-73-4P
(material prepn.; material for org. **electroluminescent** device, org. **electroluminescent** device, illuminating device and display showing high luminous efficiency and long life)

L13 ANSWER 5 OF 6 HCA COPYRIGHT 2007 ACS on STN
141:403601 Organic **electroluminescent** device and display showing high luminous efficiency and long life. Suzuri, Yoshiyuki; Kita, Hiroshi; Kato, Eisaku; Oshiyama, Tomohiro; Fukuda, Mitsuhiro; Ueda, Noriko (Konica Minolta Holdings, Inc., Japan). PCT Int. Appl. WO 2004095889 A1 20041104, 156 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (Japanese). CODEN: PIXXD2. APPLICATION: WO 2004-JP5603 20040420. PRIORITY: JP 2003-117886 20030423; JP 2004-15487 20040123.

GI



I

AB The title org. **electroluminescent** device is characterized by comprising compn. layers between a pair of electrodes which compn. layers include at least a phosphorescent **light-emitting** layer and at least one layer of which compn. layers contains a compd. represented by the following general formula I [Z1 = (substituted) arom. heterocyclic ring; Z2 = (substituted) arom. heterocyclic ring, (substituted) arom. hydrocarbon ring; Z3 = divalent linking group, single bond; R = H, substituent].

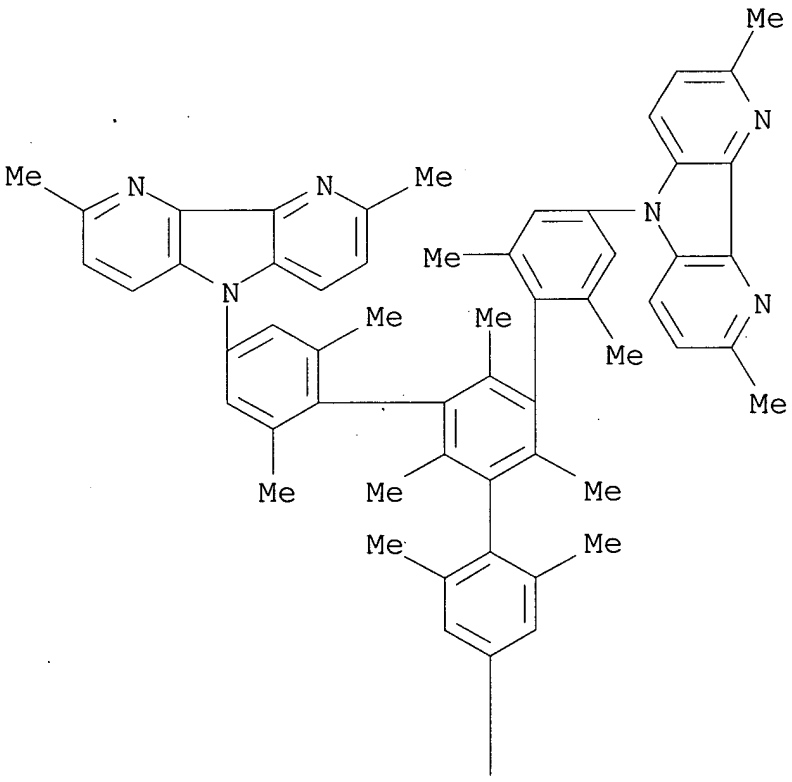
IT **787577-53-1 787577-59-7 787578-09-0 787578-13-6 787578-15-8 787578-25-0 787578-27-2 787578-33-0**

(compd. in org. **electroluminescent** device and display showing high luminous efficiency and long life)

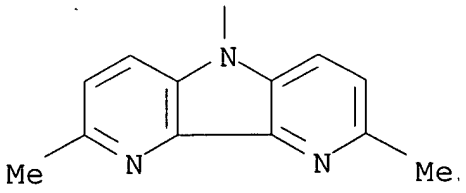
RN 787577-53-1 HCA

CN 5H-Pyrrolo[3,2-b:4,5-b']dipyridine, 5,5'-[5'-[4-(2,8-dimethyl-5H-pyrrolo[3,2-b:4,5-b']dipyridin-5-yl)-2,6-dimethylphenyl]-2,2',2'',4',6,6,6'''-heptamethyl[1,1':3',1''-terphenyl]-4,4''-diyl]bis[2,8-dimethyl- (9CI) (CA INDEX NAME)

PAGE 1-A

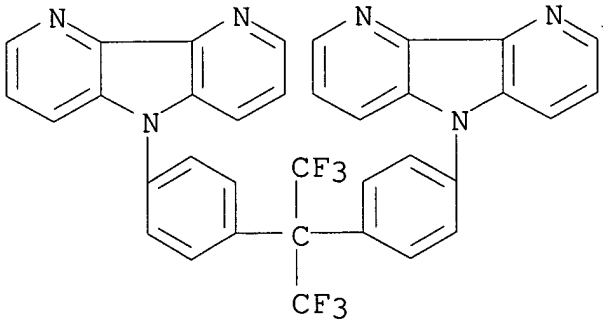


PAGE 2-A

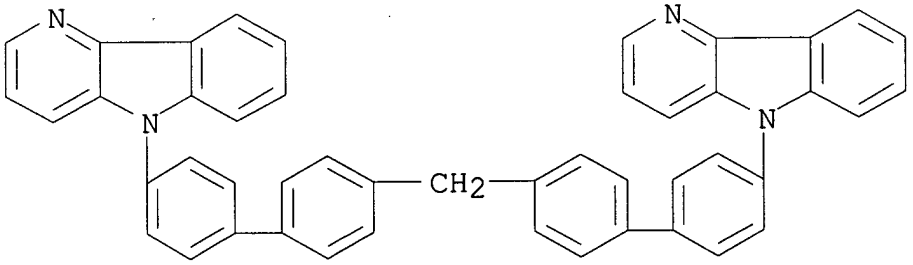


RN 787577-59-7 HCA

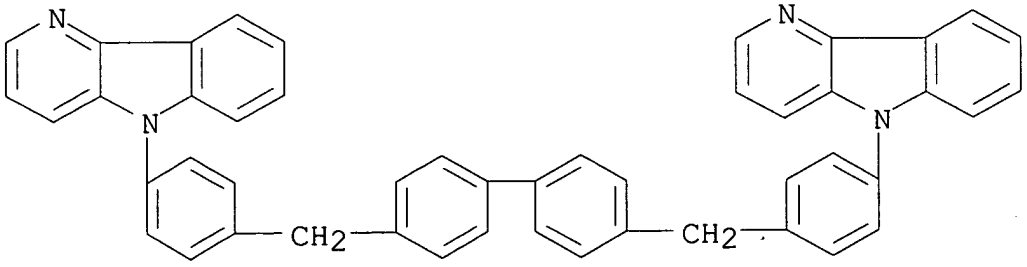
CN 5H-Pyrrolo[3,2-b:4,5-b']dipyridine, 5,5'-[[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]di-4,1-phenylene]bis- (9CI) (CA INDEX NAME)



RN 787578-09-0 HCA
CN 5H-Pyrido[3,2-b]indole, 5,5'-[methylenebis([1,1'-biphenyl]-4',4-diyl)]bis- (9CI) (CA INDEX NAME)

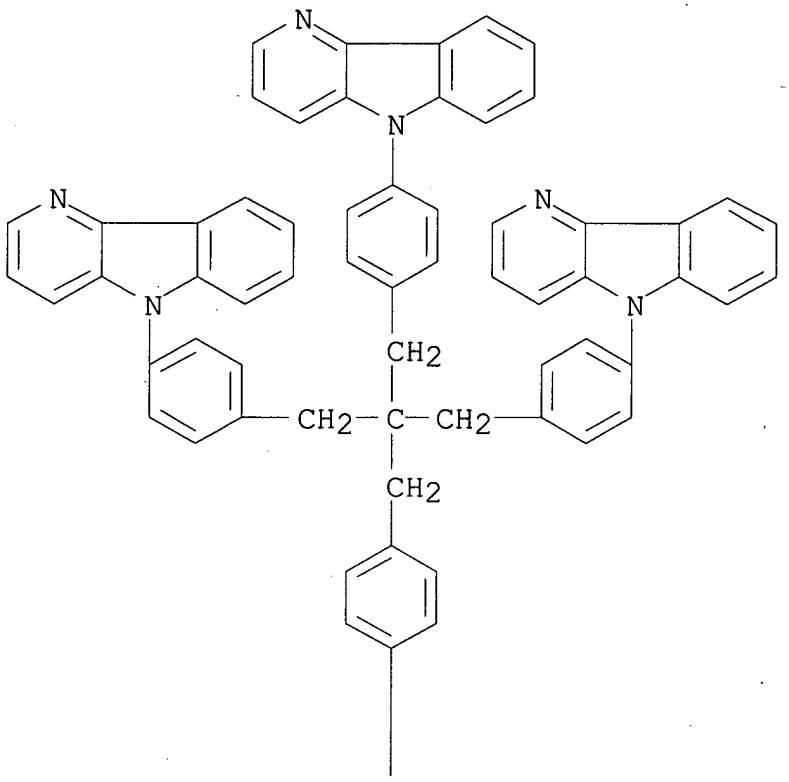


RN 787578-13-6 HCA
CN 5H-Pyrido[3,2-b]indole, 5,5'-[[1,1'-biphenyl]-4,4'-diylbis(methylene-4,1-phenylene)]bis- (9CI) (CA INDEX NAME)

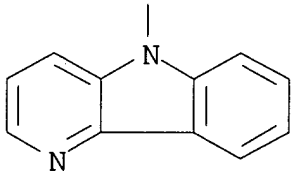


RN 787578-15-8 HCA
CN 5H-Pyrido[3,2-b]indole, 5,5'-[[2,2-bis[[4-(5H-pyrido[3,2-b]indol-5-yl)phenyl]methyl]-1,3-propanediyl]di-4,1-phenylene]bis- (9CI) (CA INDEX NAME)

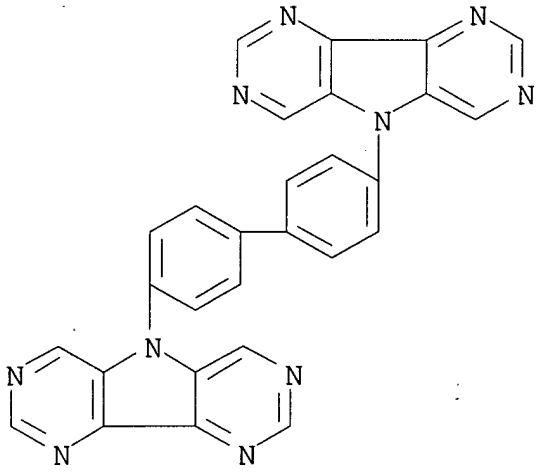
PAGE 1-A



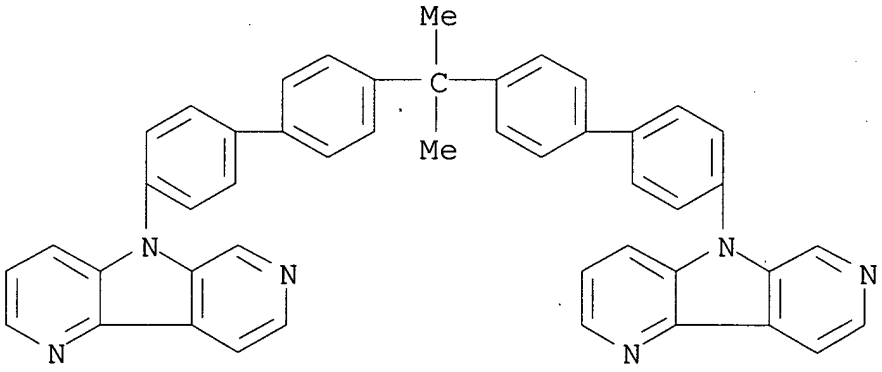
PAGE 2-A



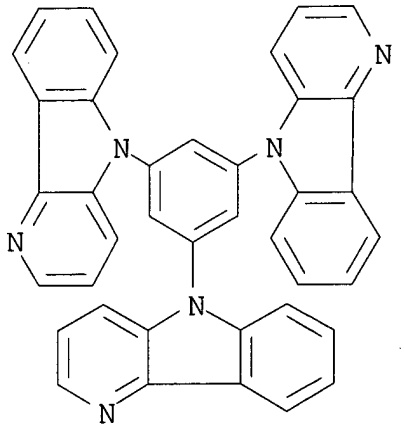
RN 787578-25-0 HCA
CN 5H-Pyrrolo[3,2-d:4,5-d']dipyrimidine, 5,5'-[1,1'-biphenyl]-4,4'-diylbis- (9CI) (CA INDEX NAME)



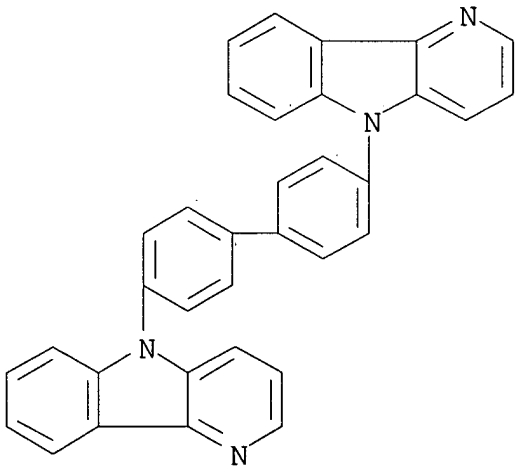
RN 787578-27-2 HCA
CN 5H-Pyrrolo[2,3-b:5,4-c']dipyridine, 5,5'-[(1-methylethylidene)bis([1,1'-biphenyl]-4',4-diyl)]bis- (9CI) (CA INDEX NAME)



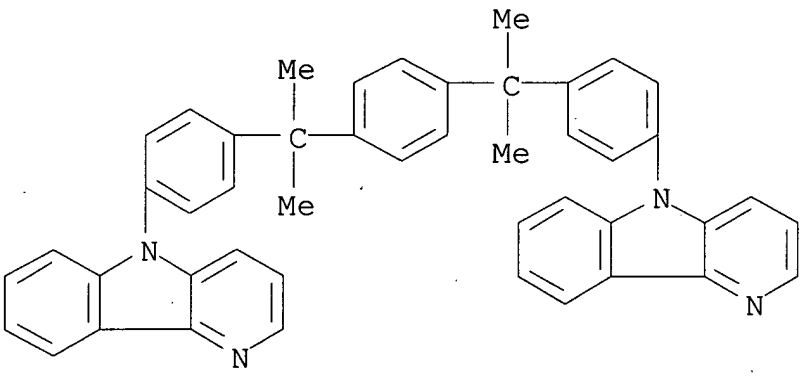
RN 787578-33-0 HCA
CN 5H-Pyrido[3,2-b]indole, 5,5',5''-(1,3,5-benzenetriyl)tris- (9CI) (CA INDEX NAME)



IT **787577-80-4P**
(compd. in org. **electroluminescent** device and display showing high luminous efficiency and long life)
RN 787577-80-4 HCA
CN 5H-Pyrido[3,2-b]indole, 5,5'-[1,1'-biphenyl]-4,4'-diylbis- (9CI) (CA INDEX NAME)



IT **787578-21-6P**
(compd. prepn.; compd. in org. **electroluminescent** device and display showing high luminous efficiency and long life)
RN 787578-21-6 HCA
CN 5H-Pyrido[3,2-b]indole, 5,5'-[1,4-phenylenebis[(1-methylethylidene)-4,1-phenylene]]bis- (9CI) (CA INDEX NAME)



IC ICM H05B033-22
CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 73
ST org **electroluminescent** device display **electroluminescence** material
IT **Electroluminescent** devices
(displays; org. **electroluminescent** device and display showing high luminous efficiency and long life)
IT **Luminescent** screens
Luminescent substances
(**electroluminescent; org. electroluminescent** device and display showing high luminous efficiency and long life)
IT 151937-22-3 343780-34-7 787577-28-0 787577-30-4 787577-32-6
787577-34-8 787577-37-1 787577-40-6 787577-43-9 787577-45-1
787577-47-3 787577-49-5 787577-51-9 **787577-53-1**
787577-56-4 **787577-59-7** 787577-61-1 787577-64-4
787577-66-6 787577-72-4 787577-74-6 787577-83-7 787577-86-0
787577-88-2 787577-90-6 787577-93-9 787577-95-1 787577-98-4
787578-01-2 787578-04-5 787578-07-8 **787578-09-0**
787578-11-4 **787578-13-6** **787578-15-8**
787578-17-0 **787578-25-0** **787578-27-2**
787578-29-4 787578-31-8 **787578-33-0** 787578-37-4
(compd. in org. **electroluminescent** device and display showing high luminous efficiency and long life)
IT 787577-77-9P **787577-80-4P** 787578-23-8P
(compd. in org. **electroluminescent** device and display showing high luminous efficiency and long life)
IT 244-63-3, β-Carboline 244-69-9, γ-Carboline 245-08-9, δ-Carboline 1095-78-9 3001-15-8, 4,4'-Diiodobiphenyl 13029-08-8 787578-41-0 787578-44-3
(compd. prepn.; compd. in org. **electroluminescent** device and display showing high luminous efficiency and long

life)

IT 787577-68-8P 787578-19-2P **787578-21-6P**
(compd. prepn.; compd. in org. **electroluminescent** device and display showing high luminous efficiency and long life)

L13 ANSWER 6 OF 6 HCA COPYRIGHT 2007 ACS on STN

134:107714 Organic **electroluminescent** element. Ueda, Noriko; Suzuri, Yoshiyuki; Yamada, Taketoshi; Kita, Hiroshi (Konica Corporation, Japan). Eur. Pat. Appl. EP 1067165 A2 **20010110**, 93 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO. (English). CODEN: EPXXDW. APPLICATION: EP 2000-114436 20000705. PRIORITY: JP 1999-190287 19990705.

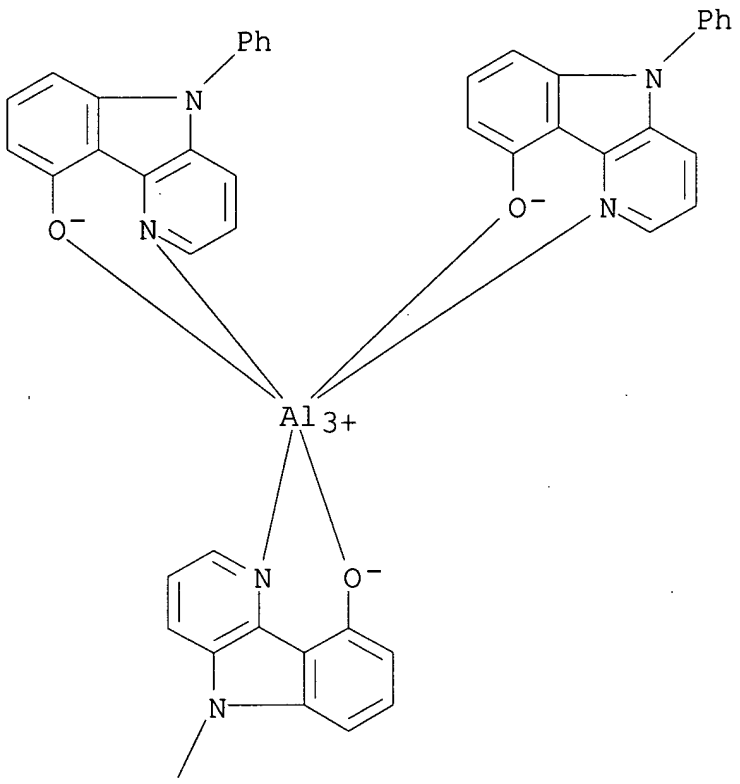
AB Org. **electroluminescent** elements comprising a **light emitting** layer comprised of ≥1 thin layers of an org. compd. put between an anode and a cathode are described in which ≥1 org. compd. thin layer contains an organometallic complex having both an ionic coordinate bond formed by a nitrogen anion (e.g., included in an arom. heterocyclic ring) and a metal cation and a coordinate bond formed between a nitrogen atom or a chalcogen and a metal. The metal cation of the org. metal complex may be selected from Al, Ga, In, TI, Be, Mg, Sr, Ba, Ca, Zn, Cd, Hg, Pd, or Cu.

IT **318989-58-1 318989-59-2 318989-60-5 318989-61-6**
(org. **electroluminescent** elements using organometallic compd. emitting materials)

RN 318989-58-1 HCA

CN Aluminum, tris(5-phenyl-5H-pyrido[3,2-b]indol-9-olato-κN1,κO9)- (9CI) (CA INDEX NAME)

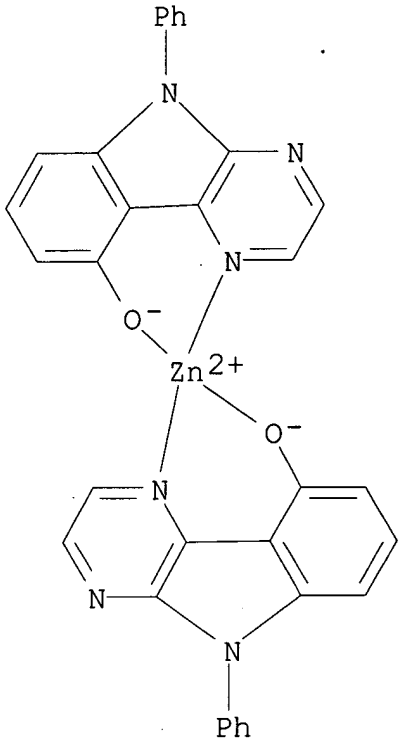
PAGE 1-A



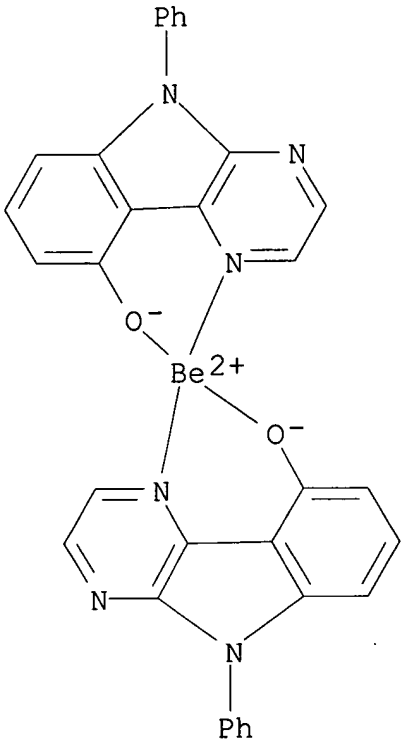
PAGE 2-A

Ph

RN 318989-59-2 HCA
CN Zinc, bis(5-phenyl-5H-pyrazino[2,3-b]indol-9-olato-κN1,κO9)-, (T-4)- (9CI) (CA INDEX NAME)

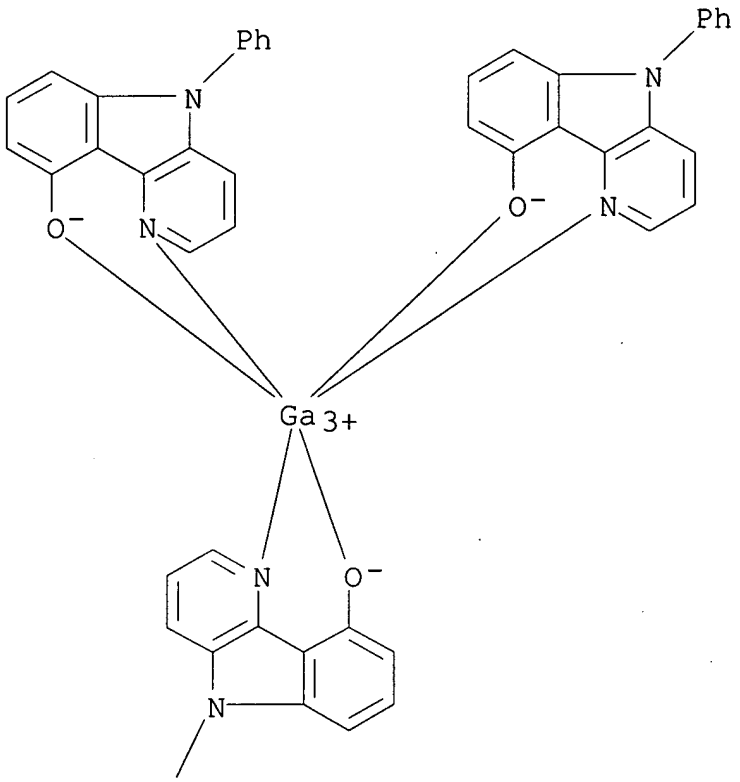


RN 318989-60-5 HCA
CN Beryllium, bis(5-phenyl-5H-pyrazino[2,3-b]indol-9-olato-κN1,κO9)-, (T-4)- (9CI) (CA INDEX NAME)



RN 318989-61-6 HCA
CN Gallium, tris(5-phenyl-5H-pyrido[3,2-b]indol-9-olato-κN1,κO9)- (9CI) (CA INDEX NAME)

PAGE 1-A



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IC ICM C09K011-06
ICS H05B033-14

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 76, 78

ST **electroluminescent** device organometallic complex

IT Phosphors
(**electroluminescent**; org. **electroluminescent** elements using organometallic compd. emitting materials)

IT **Electroluminescent** devices
(org. **electroluminescent** elements using organometallic compd. emitting materials)

IT 7429-90-5D, Aluminum, nitrogen heterocyclic ligand complexes, uses

7439-95-4D, Magnesium, organometallic compds., uses 7439-97-6D, Mercury, organometallic compds., uses 7440-05-3D, Palladium, organometallic compds., uses 7440-24-6D, Strontium, organometallic compds., uses 7440-28-0D, Thallium, organometallic compds., uses 7440-39-3D, Barium, organometallic compds., uses 7440-41-7D, Beryllium, nitrogen heterocyclic ligand complexes, uses 7440-43-9D, Cadmium, organometallic compds., uses 7440-50-8D, Copper, organometallic compds., uses 7440-55-3D, Gallium, nitrogen heterocyclic ligand complexes, uses 7440-66-6D, Zinc, nitrogen heterocyclic ligand complexes, uses 7440-70-2D, Calcium, organometallic compds., uses 7440-74-6D, Indium, organometallic compds., uses 129227-36-7D, gallium complex 193622-12-7 318988-63-5D, aluminum and gallium complexes 318988-64-6D, zinc complex 318988-65-7D, beryllium complex 318988-66-8D, aluminum and gallium complexes 318988-67-9D, aluminum complex 318988-68-0D, gallium complex 318988-69-1 318988-70-4 318988-71-5 318988-72-6 318988-73-7 318988-74-8 318988-75-9 318988-76-0 318988-77-1 318988-78-2 318988-79-3 318988-80-6 318988-81-7 318988-82-8 318988-83-9 318988-84-0 318988-85-1 318988-86-2 318988-87-3 318988-88-4 318988-89-5 318988-90-8 318988-91-9 318988-92-0 318988-93-1 318988-94-2 318988-95-3D, deriv., beryllium complex 318988-96-4 318988-97-5D, aluminum complex 318988-97-5D, beryllium complex 318988-98-6D, aluminum complex 318988-99-7D, aluminum complex 318989-00-3D, zinc complex 318989-01-4D, gallium complex 318989-02-5 318989-03-6 318989-04-7 318989-05-8 318989-06-9D, aluminum complex 318989-07-0D, zinc complex 318989-08-1D, beryllium complex 318989-09-2D, gallium complex 318989-10-5D, aluminum complex 318989-11-6D, zinc complex 318989-12-7 318989-13-8 318989-14-9 318989-15-0 318989-16-1 318989-17-2 318989-18-3 318989-19-4 318989-20-7 318989-22-9 318989-23-0 318989-24-1 318989-25-2 318989-26-3 318989-27-4 318989-28-5 318989-29-6 318989-30-9 318989-31-0D, beryllium complex 318989-32-1 318989-33-2D, aluminum and gallium complexes 318989-34-3 318989-35-4 318989-36-5 318989-37-6 318989-38-7 318989-39-8 318989-40-1 318989-41-2 318989-42-3 318989-43-4 318989-44-5 318989-45-6 318989-46-7 318989-47-8 318989-48-9 318989-49-0 318989-50-3 318989-51-4 318989-52-5 318989-53-6 318989-54-7 318989-55-8 318989-56-9 318989-57-0 **318989-58-1 318989-59-2 318989-60-5 318989-61-6** 318989-62-7 318989-63-8 318989-64-9 318989-65-0 318989-66-1 318989-67-2

(org. **electroluminescent** elements using organometallic compd. emitting materials)

IT 183021-20-7DP, aluminum and gallium complexes

(org. **electroluminescent** elements using organometallic compd. emitting materials)

IT 555-31-7, Aluminum isopropoxide 183021-20-7

(org. **electroluminescent** elements using organometallic compd. emitting materials)

↓↓↓ (pretty junky from here on out)

=> D L14 1-20 CBIB ABS HITSTR HITRN

L14 ANSWER 1 OF 20 HCA COPYRIGHT 2007 ACS on STN
143:74004 Near-infrared fluorescent contrast medium. Kagawa, Nobuaki; Habu, Takeshi; Ueda, Eiichi; Nakajima, Akihisa (Japan). U.S. Pat. Appl. Publ. US 2005136007 A1 20050623, 15 pp. (English). CODEN: USXXCO. APPLICATION: US 2004-11806 20041214. PRIORITY: JP 2003-423282 20031219.

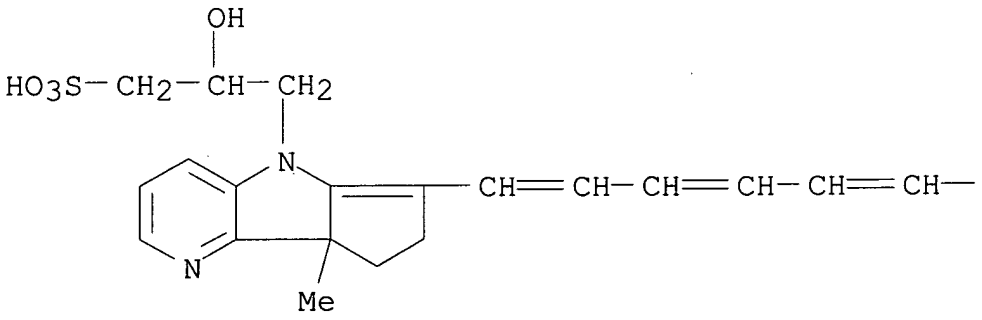
AB A near-IR fluorescing contrast medium which exhibits superior imaging capability and is also difficult to accumulate in a living body, is disclosed, comprising a cyanine compd. contg. water-solubilizing groups and represented by the following formula. The imaging method by use thereof is also disclosed.

IT **855005-87-7 855006-00-7**
(near-IR fluorescent contrast medium)

RN 855005-87-7 HCA

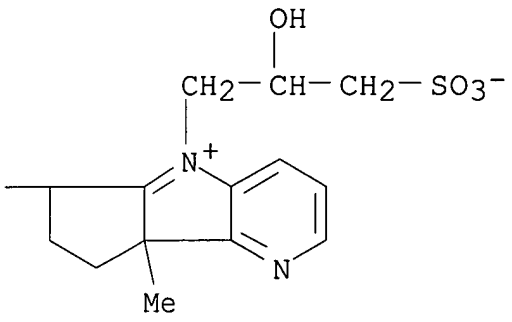
CN Cyclopenta[4,5]pyrrolo[3,2-b]pyridinium, 6,7,8,8a-tetrahydro-5-(2-hydroxy-3-sulfopropyl)-8a-methyl-6-[6-[5,7,8,8a-tetrahydro-5-(2-hydroxy-3-sulfopropyl)-8a-methylcyclopenta[4,5]pyrrolo[3,2-b]pyridin-6-yl]-1,3,5-hexatrienyl]-, inner salt, monosodium salt (9CI) (CA INDEX NAME)

PAGE 1-A



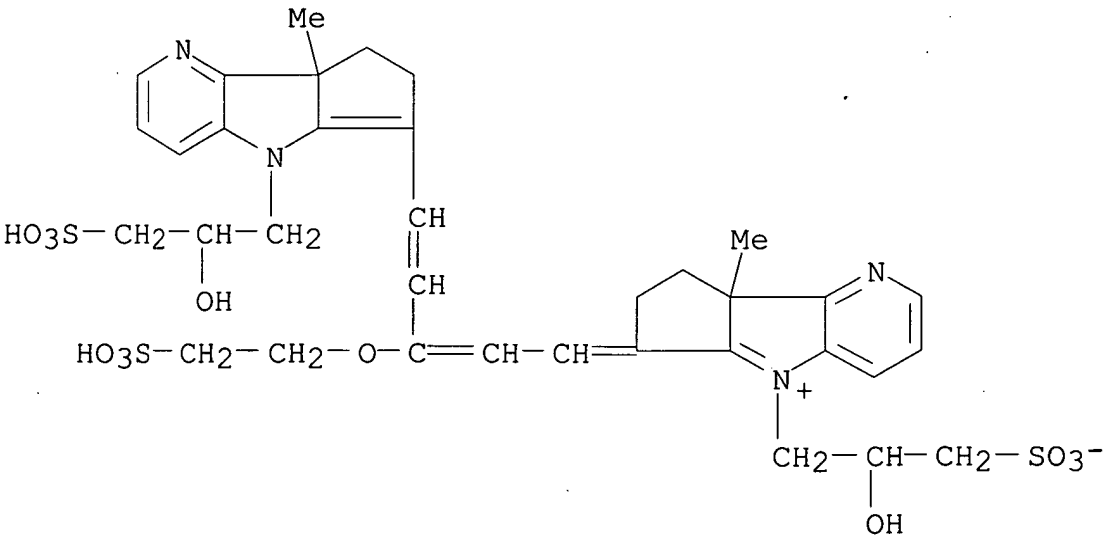
● Na

PAGE 1-B



RN 855006-00-7 HCA

CN Cyclopenta[4,5]pyrrolo[3,2-b]pyridinium, 6,7,8,8a-tetrahydro-5-(2-hydroxy-3-sulfopropyl)-8a-methyl-6-[3-(2-sulfoethoxy)-5-[5,7,8,8a-tetrahydro-5-(2-hydroxy-3-sulfopropyl)-8a-methylcyclopenta[4,5]pyrrolo[3,2-b]pyridin-6-yl]-2,4-pentadienylidene]-, inner salt, monosodium salt (9CI) (CA INDEX NAME)



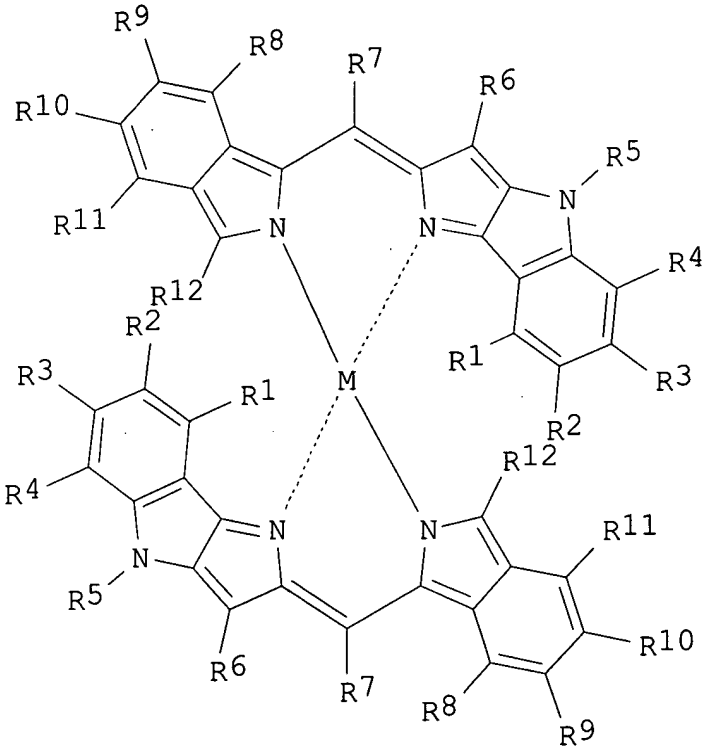
● Na

IT **855005-87-7 855006-00-7**
(near-IR fluorescent contrast medium)

L14 ANSWER 2 OF 20 HCA COPYRIGHT 2007 ACS on STN

140:243648 Dipyrromethene metal chelate and optical recording material using it. Nishimoto, Taizo; Nakagawa, Shinichi; Saito, Yasunori; Misawa, Tsutayoshi (Mitsui Chemicals Inc., Japan; Yamamoto Chemicals Inc.). Jpn. Kokai Tokkyo Koho JP 2004066459 A 20040304, 25 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-224656 20020801.

GI



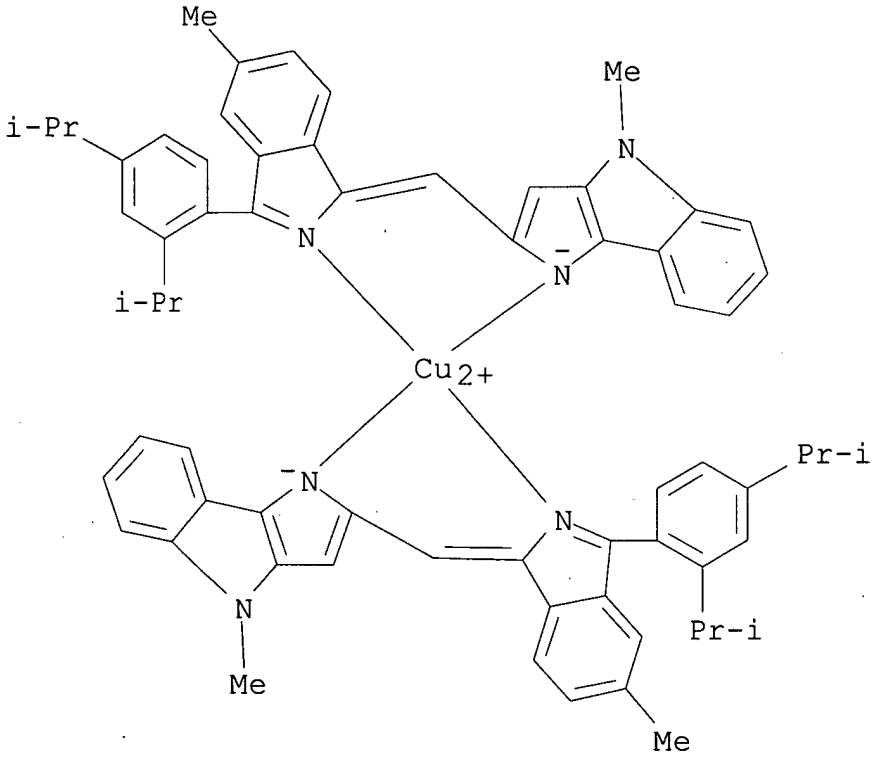
I

AB The dipyrromethene metal chelate I [R1-4, R6-11 = H, halo, alkyl, alkoxy, alkylthio, aryl, aryloxy, arylthio, acyl, aralkyl, these may be substituted; R5 = H, alkyl, aryl, aralkyl, these may be substituted; R12 = (un)substituted aryl, heteroaryl; M = transition metal] is claimed. The optical recording material comprises a support coated with a recording layer contg. ≥1 I and a reflection layer. The material shows good durability and recorded and read by 520-690 nm laser beam.

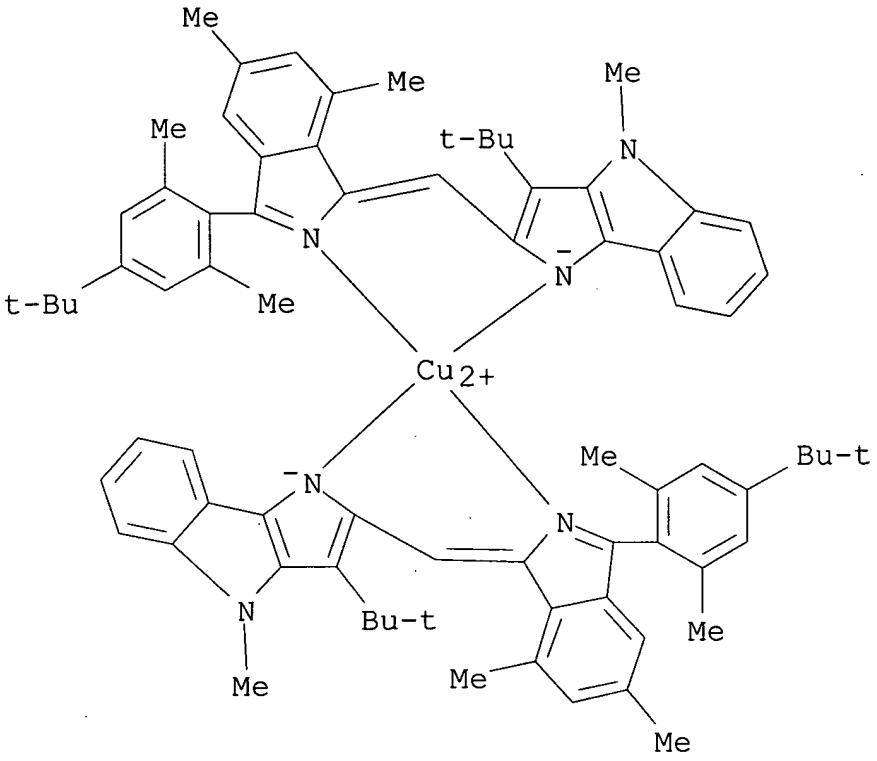
IT **667871-59-2 667871-60-5 667871-61-6 667871-62-7 667871-63-8 667871-64-9 667871-65-0 667871-66-1 667871-67-2**

667871-68-3 667871-72-9 667871-73-0
667871-74-1
(optical recording material contg. dipyrromethene metal chelate)

RN 667871-59-2 HCA
CN Copper, bis[2-[[3-[2,4-bis(1-methylethyl)phenyl]-5-methyl-1H-isoindol-1-ylidene-κN]methyl]-1,4-dihydro-4-methylpyrrolo[3,2-b]indolato-κN1]- (9CI) (CA INDEX NAME)

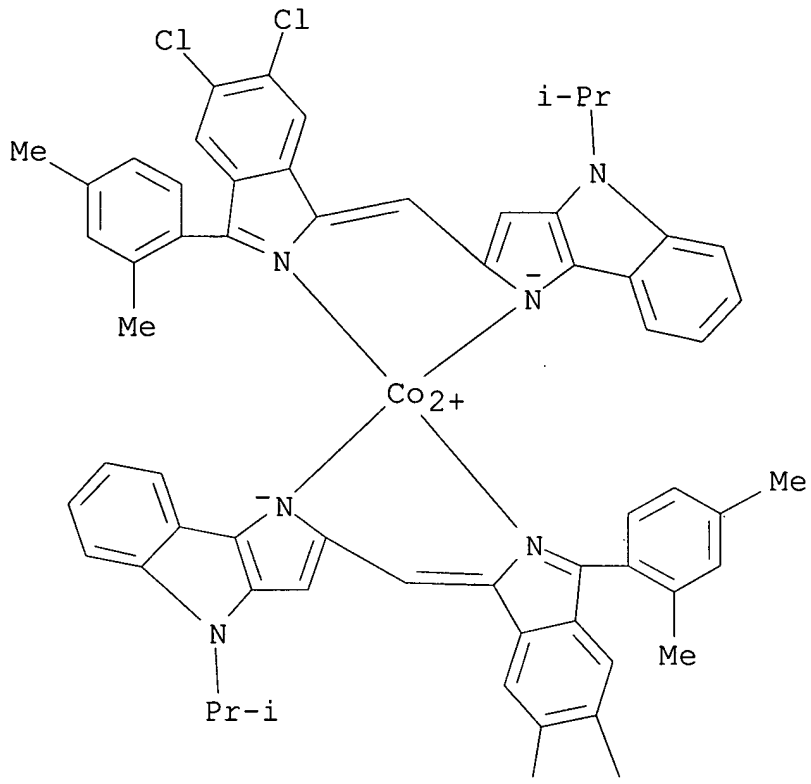


RN 667871-60-5 HCA
CN Copper, bis[3-(1,1-dimethylethyl)-2-[[3-[4-(1,1-dimethylethyl)-2,6-dimethylphenyl]-5,7-dimethyl-1H-isoindol-1-ylidene-κN]methyl]-1,4-dihydro-4-methylpyrrolo[3,2-b]indolato-κN1]- (9CI) (CA INDEX NAME)



RN 667871-61-6 HCA
CN Cobalt, bis[2-[[5,6-dichloro-3-(2,4-dimethylphenyl)-1H-isoindol-1-ylidene-κN]methyl]-1,4-dihydro-4-(1-methylethyl)pyrrolo[3,2-b]indolato-κN1]- (9CI) (CA INDEX NAME)

PAGE 1-A



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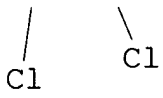
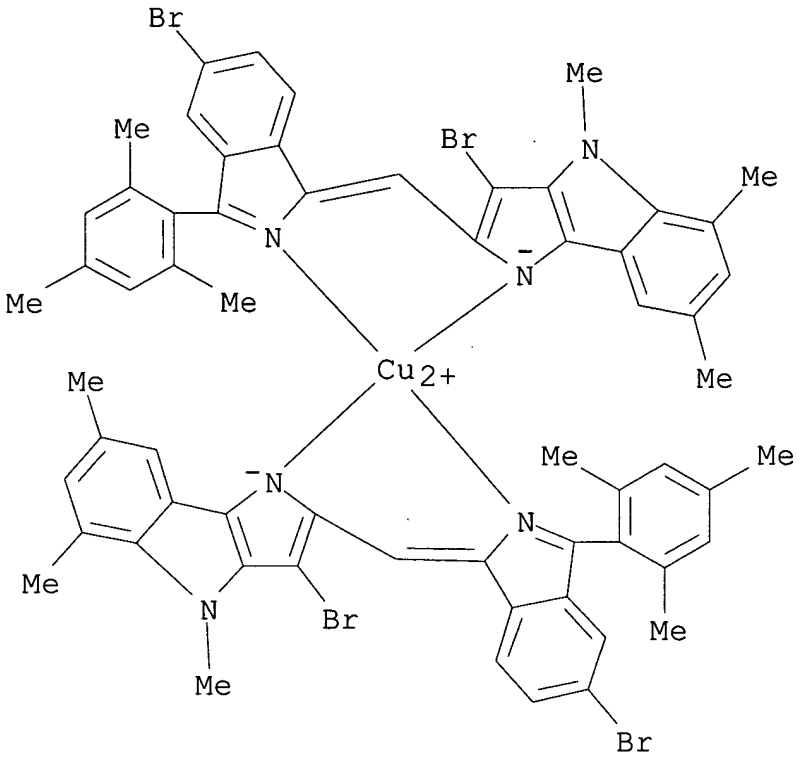
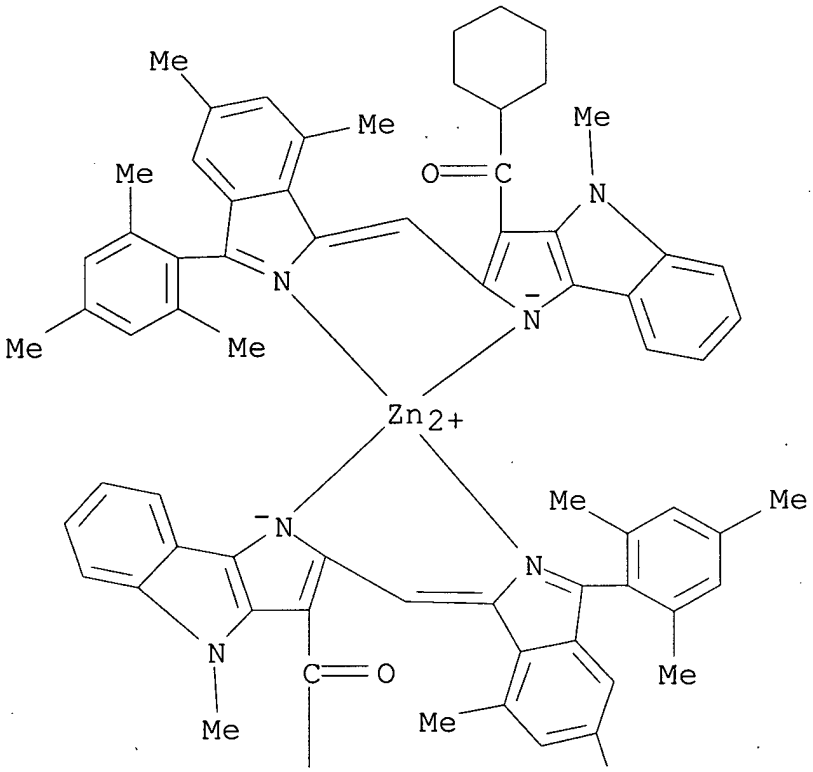


RN 667871-62-7 HCA
CN Copper, bis[3-bromo-2-[[5-bromo-3-(2,4,6-trimethylphenyl)-1H-isoindol-1-ylidene-κN]methyl]-1,4-dihydro-4,5,7-trimethylpyrrolo[3,2-b]indolato-κN1]- (9CI) (CA INDEX NAME)



RN 667871-63-8 HCA
CN Zinc, bis[cyclohexyl[2-[[5,7-dimethyl-3-(2,4,6-trimethylphenyl)-1H-isoindol-1-ylidene-κN]methyl]-1,4-dihydro-4-methylpyrrolo[3,2-b]indol-3-yl-κN1]methanonato]-, (T-4)- (9CI) (CA INDEX NAME)

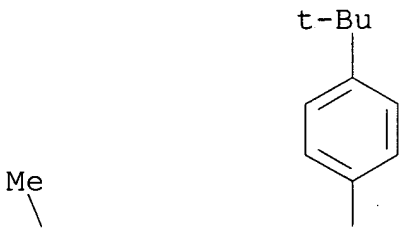
PAGE 1-A



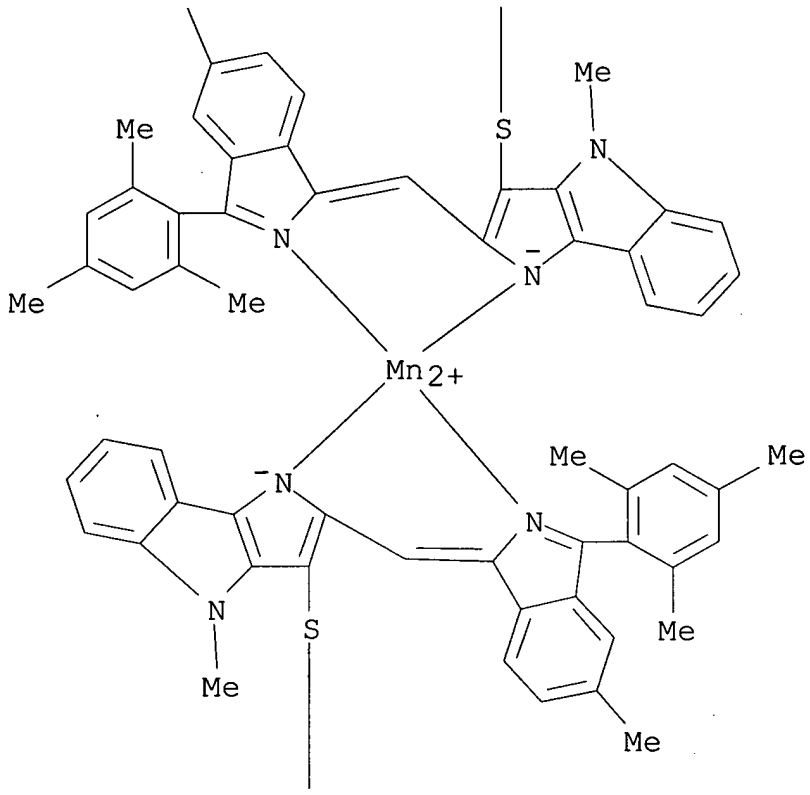
PAGE 2-A

RN 667871-64-9 HCA
CN Manganese, bis[3-[[4-(1,1-dimethylethyl)phenyl]thio]-1,4-dihydro-4-methyl-2-[[5-methyl-3-(2,4,6-trimethylphenyl)-1H-isoindol-1-ylidene-κN]methyl]pyrrolo[3,2-b]indolato-κN1]- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



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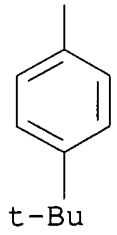
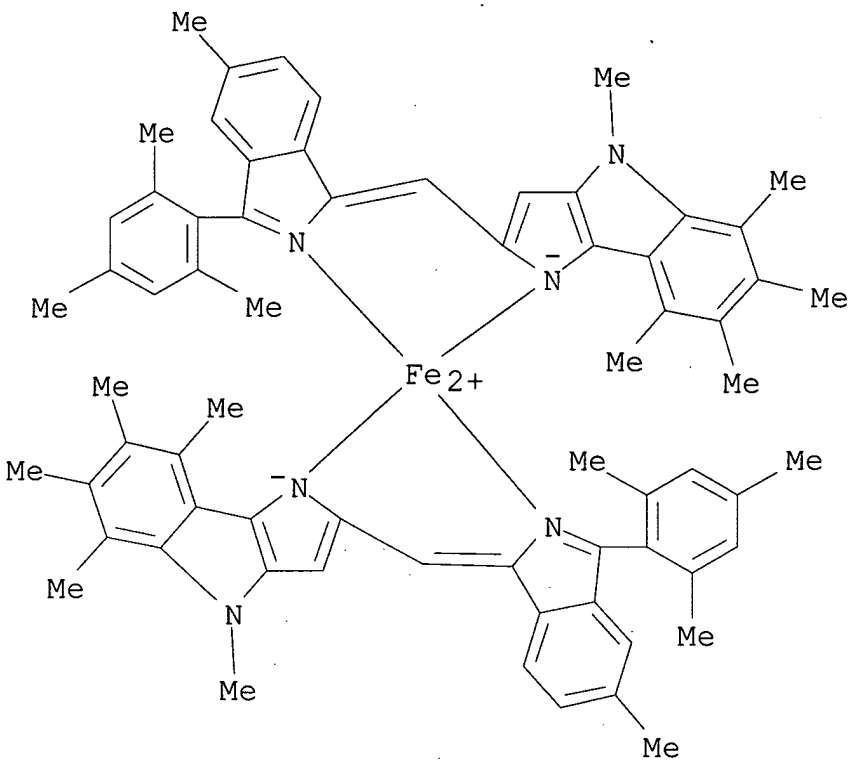
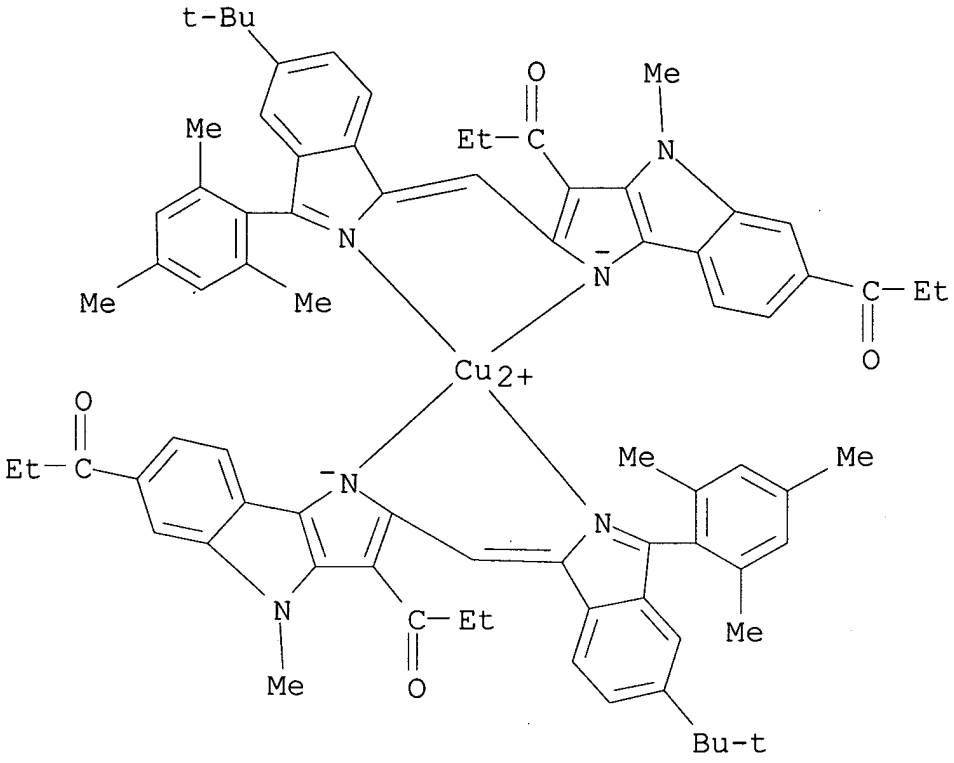


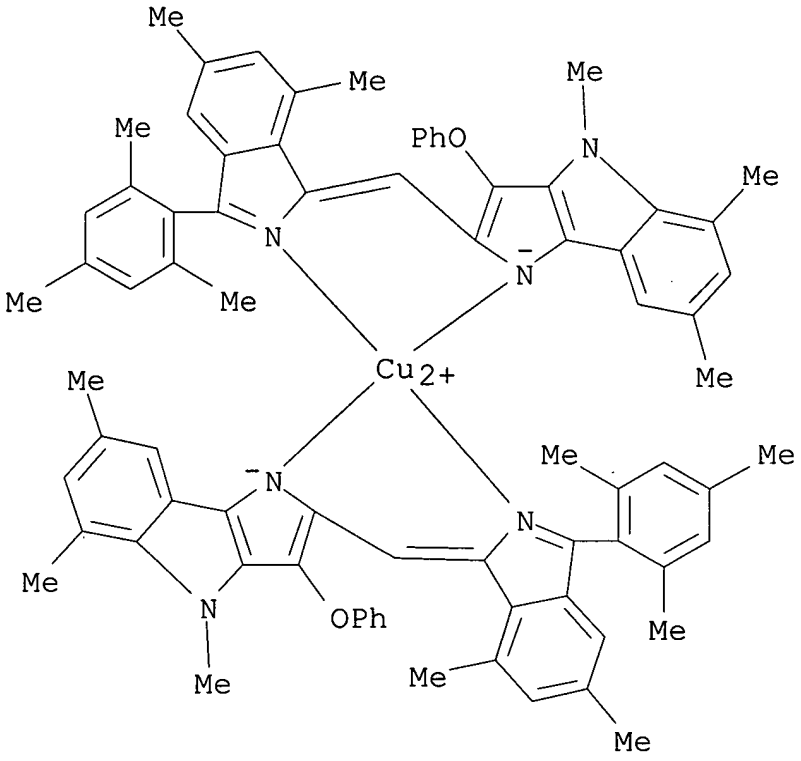
RN 667871-65-0 HCA
CN Iron, bis[1,4-dihydro-4,5,6,7,8-pentamethyl-2-[[5-methyl-3-(2,4,6-trimethylphenyl)-1H-isoindol-1-ylidene-κN]methyl]pyrrolo[3,2-b]indolato-κN1]- (9CI) (CA INDEX NAME)



RN 667871-66-1 HCA
CN Copper, bis[[1,1'-[2-[[5-(1,1-dimethylethyl)-3-(2,4,6-trimethylphenyl)-1H-isoindol-1-ylidene-κN]methyl]-1,4-dihydro-4-methylpyrrolo[3,2-b]indole-3,6-diyl-κN1]bis[1-propanonato]](1-)]- (9CI) (CA INDEX NAME)



RN 667871-67-2 HCA
CN Copper, bis[2-[[5,7-dimethyl-3-(2,4,6-trimethylphenyl)-1H-isoindol-1-ylidene-κN]methyl]-1,4-dihydro-4,5,7-trimethyl-3-phenoxypyrrolo[3,2-b]indolato-κN1]- (9CI) (CA INDEX NAME)



RN 667871-68-3 HCA
CN Zinc, bis[1-[2-[[6-bromo-3-(1,3,5-trimethyl-1H-pyrrol-2-yl)-1H-isoindol-1-ylidene-κN]methyl]-1,4-dihydro-4-(phenylmethyl)pyrrolo[3,2-b]indol-6-yl-κN1]-1-propanonato]-, (T-4)- (9CI) (CA INDEX NAME)

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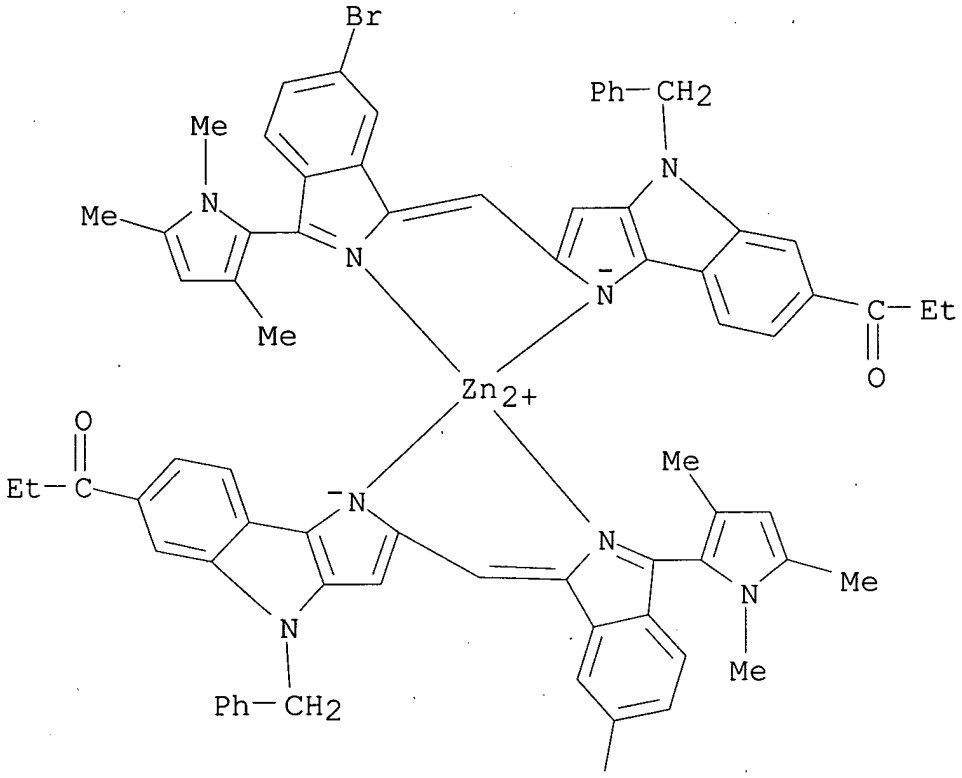

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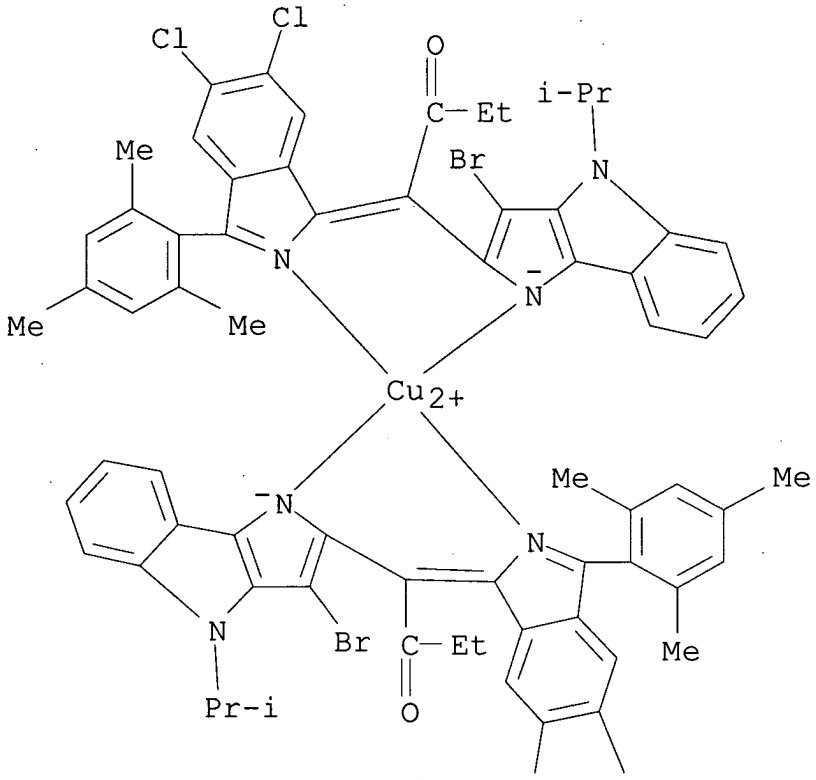
RN 667871-72-9 HCA
CN Copper, bis[1-[3-bromo-1,4-dihydro-4-(1-methylethyl)pyrrolo[3,2-b]indol-2-yl-κN1]-1-[5,6-dichloro-3-(2,4,6-trimethylphenyl)-1H-isoindol-1-ylidene-κN]-2-butanonato]- (9CI) (CA INDEX NAME)

PAGE 1-A



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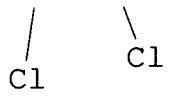
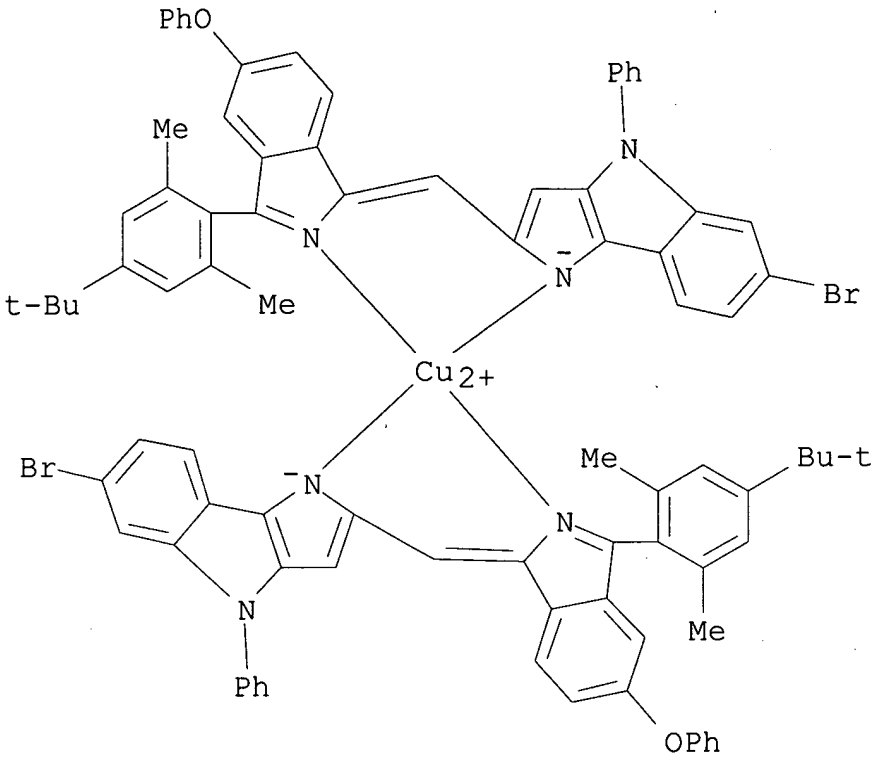
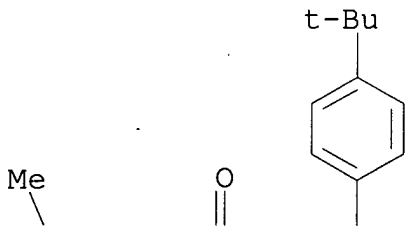


RN 667871-73-0 HCA
CN Copper, bis[6-bromo-2-[[3-[4-(1,1-dimethylethyl)-2,6-dimethylphenyl]-5-phenoxy-1H-isoindol-1-ylidene-κN]methyl]-1,4-dihydro-4-phenylpyrrolo[3,2-b]indolato-κN1]- (9CI) (CA INDEX NAME)



RN 667871-74-1 HCA
CN Copper, bis[1-[1-[[3-[4-(1,1-dimethylethyl)phenoxy]-1,4-dihydro-4-phenylpyrrolo[3,2-b]indol-2-yl-κN1]methylene]-5-methyl-3-(5-methyl-2-furanyl)-1H-isoindol-7-yl-κN]-2-methyl-1-propanonato]-(9CI) (CA INDEX NAME)

PAGE 1-A



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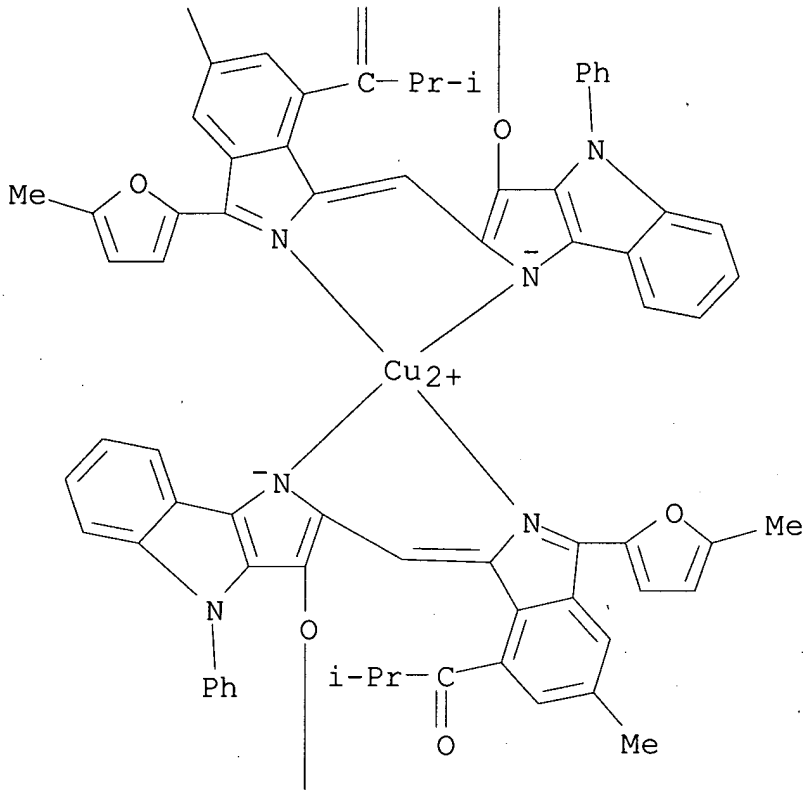

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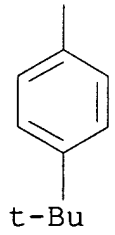
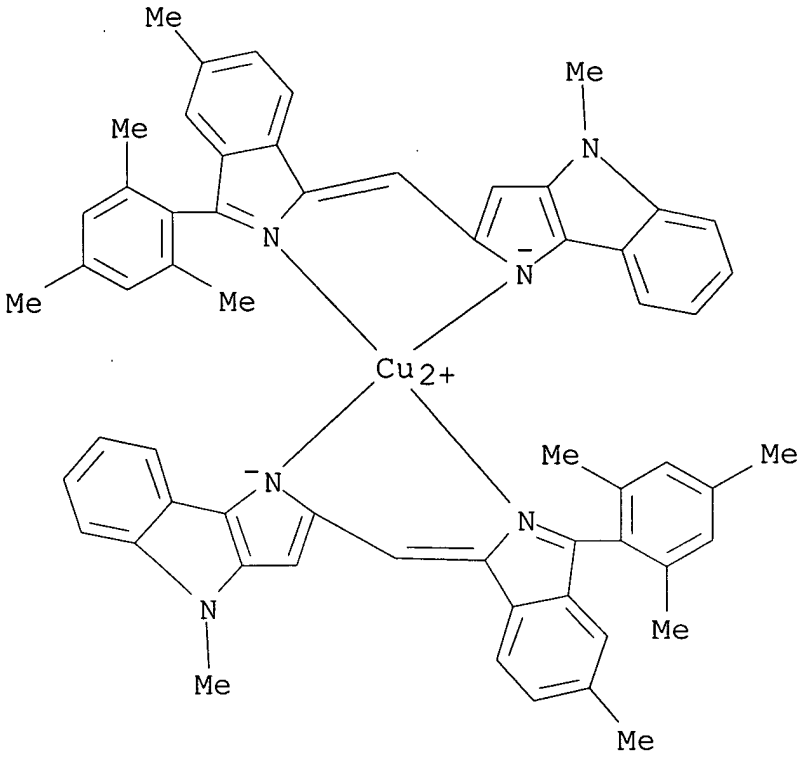
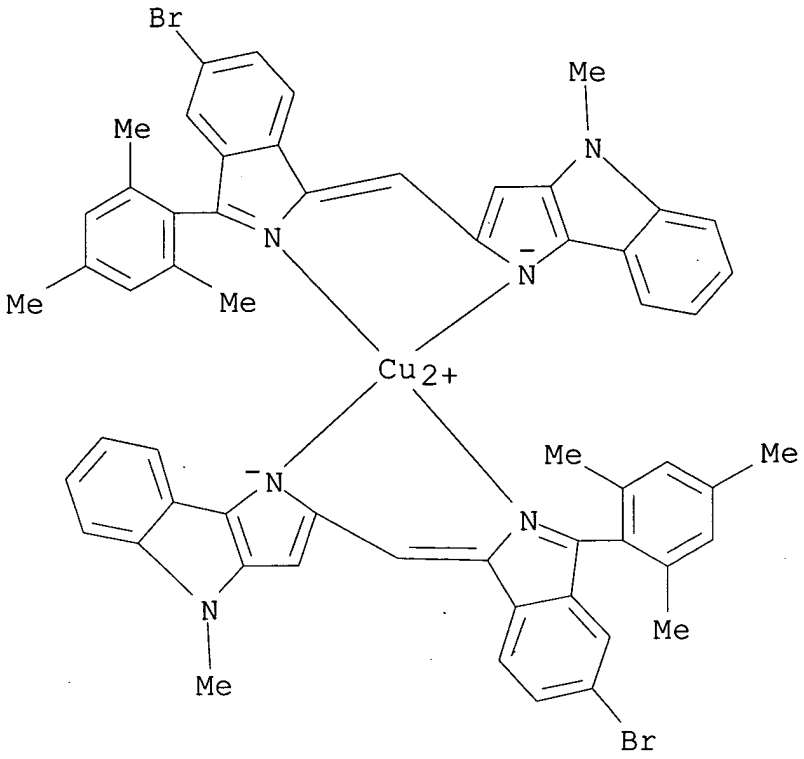


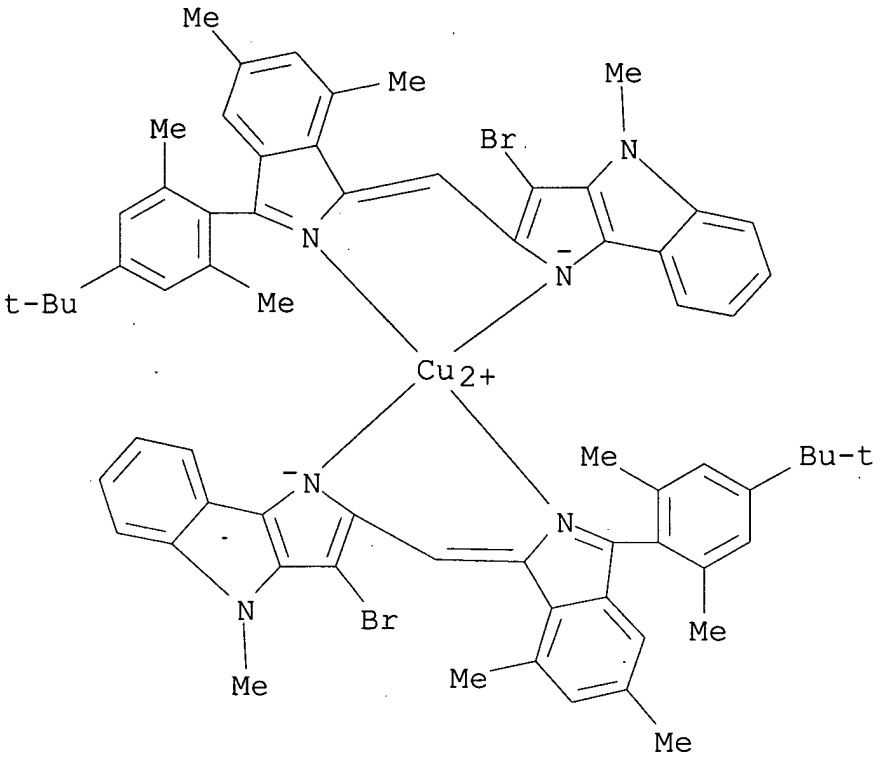
IT **667871-56-9P 667871-57-0P 667871-58-1P**
(optical recording material contg. dipyrromethene metal chelate)
RN 667871-56-9 HCA
CN Copper, bis[1,4-dihydro-4-methyl-2-[[5-methyl-3-(2,4,6-trimethylphenyl)-1H-isoindol-1-ylidene-κN]methyl]pyrrolo[3,2-b]indolato-κN1]- (9CI) (CA INDEX NAME)



RN 667871-57-0 HCA
CN Copper, bis[2-[[5-bromo-3-(2,4,6-trimethylphenyl)-1H-isoindol-1-ylidene-κN]methyl]-1,4-dihydro-4-methylpyrrolo[3,2-b]indolato-κN1]- (9CI) (CA INDEX NAME)



RN 667871-58-1 HCA
CN Copper, bis[3-bromo-2-[[3-[4-(1,1-dimethylethyl)-2,6-dimethylphenyl]-5,7-dimethyl-1H-isoindol-1-ylidene-κN]methyl]-1,4-dihydro-4-methylpyrrolo[3,2-b]indolato-κN1]- (9CI) (CA INDEX NAME)



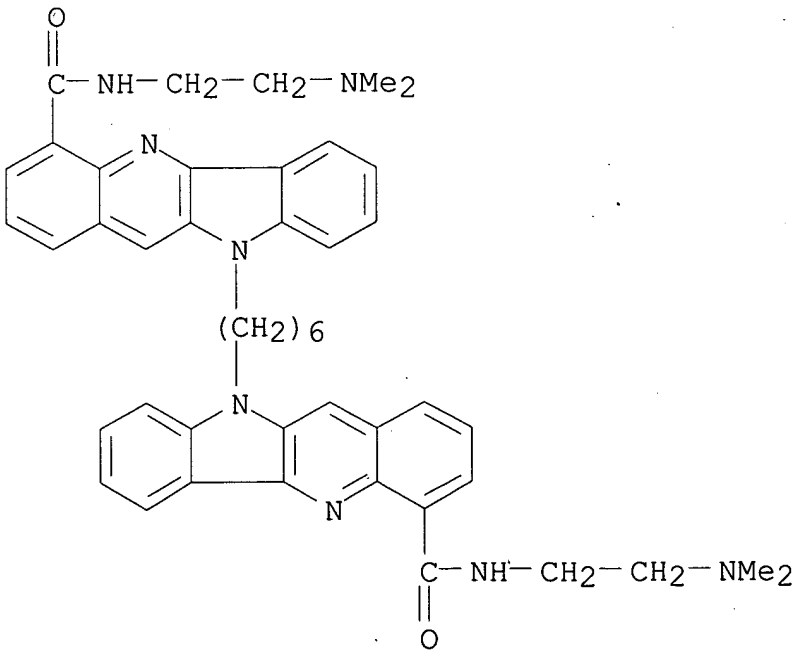
IT **667871-59-2 667871-60-5 667871-61-6 667871-62-7 667871-63-8 667871-64-9 667871-65-0 667871-66-1 667871-67-2 667871-68-3 667871-72-9 667871-73-0 667871-74-1**
(optical recording material contg. dipyrromethene metal chelate)
IT **667871-56-9P 667871-57-0P 667871-58-1P**
(optical recording material contg. dipyrromethene metal chelate)

L14 ANSWER 3 OF 20 HCA COPYRIGHT 2007 ACS on STN
137:319944 Synthesis and cytotoxic activity of N-(2-Diethylamino)ethylcarboxamide and other derivatives of 10H-Quindoline. Chen, Junjie; Deady, Leslie W.; Kaye, Anthony J.; Finlay, Graeme J.; Baguley, Bruce C.; Denny, William A. (Chemistry Department, La Trobe University, Victoria, 3086, Australia). Bioorganic & Medicinal Chemistry, 10(7), 2381-2386 (English) **2002**. CODEN: BMECEP. ISSN: 0968-0896. OTHER SOURCES: CASREACT 137:319944. Publisher: Elsevier Science Ltd..
AB A series of mono- and dimeric N-methylquindoline carboxamides were prepd. by Friedlander condensation between Me 2-amino-3-formyl benzoate and 3-acetoxy-1-acetylindoles, followed by exhaustive methylation with Me iodide to give N-methylquindoline esters. Direct amination of these, or hydrolysis to the acids and amine

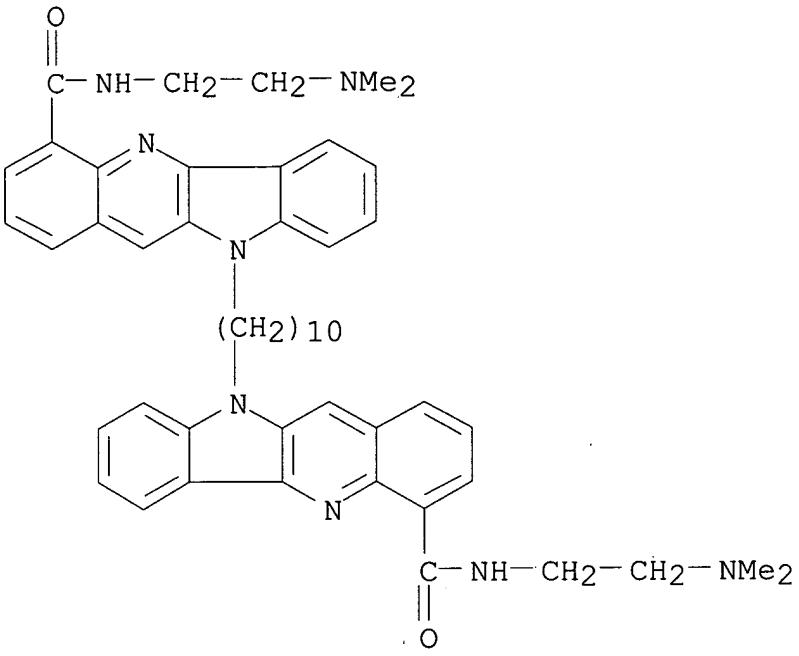
coupling via intermediate imidazolides gave the desired carboxamides. The compds. were evaluated in a panel of cell lines in culture. The monomeric compds. showed similar structure-activity relationships to the known indeno[1,2-b]quinolines, with a 4-Me group increasing potency several-fold. Bis analogs linked through the carboxamide were more cytotoxic than the corresponding monomers in the human leukemia lines, but N-N linked dimers were generally less potent, except for a tetracationic deriv. The most potent monomeric analog showed moderate growth delay (.apprx.5 days) against sub-cutaneously implanted colon 38 tumors in mice.

IT **473595-57-2P 473595-58-3P 473595-59-4P**
473595-60-7P 473595-71-0P 473595-72-1P
(synthesis and cytotoxic activity of N-(2-Diethylamino)ethylcarboxamide and other derivs. of 10H-Quindoline)

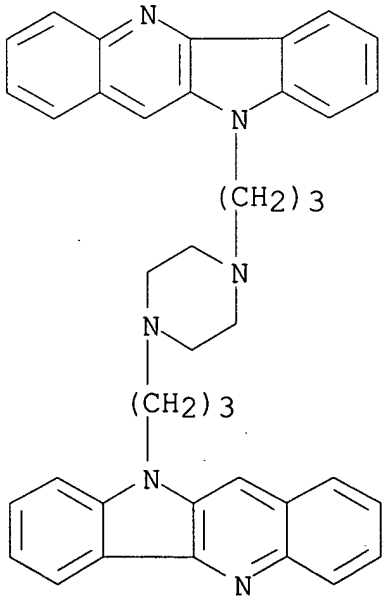
RN 473595-57-2 HCA
CN 10H-Quindoline-4-carboxamide, 10,10'-(1,6-hexanediyl)bis[N-[2-(dimethylamino)ethyl]- (9CI) (CA INDEX NAME)



RN 473595-58-3 HCA
CN 10H-Quindoline-4-carboxamide, 10,10'-(1,10-decanediyl)bis[N-[2-(dimethylamino)ethyl]- (9CI) (CA INDEX NAME)



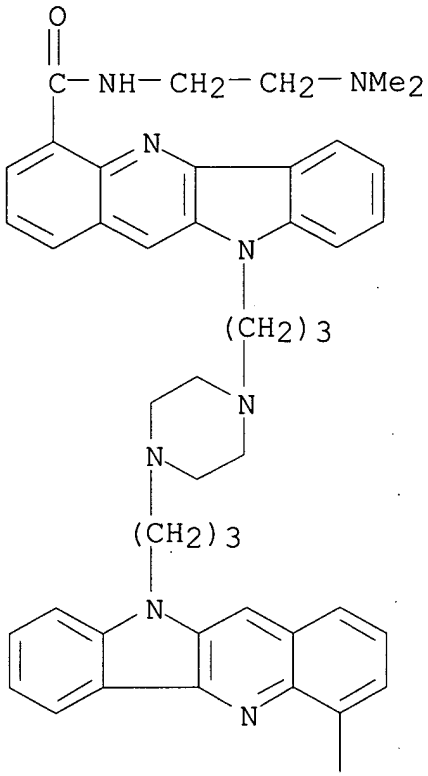
RN 473595-59-4 HCA
CN 10H-Quindoline, 10,10'-(1,4-piperazinediyldi-3,1-propanediyl)bis- (9CI) (CA INDEX NAME)



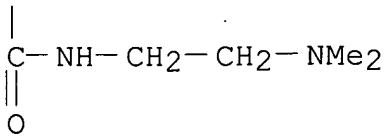
RN 473595-60-7 HCA
CN 10H-Quindoline-4-carboxamide, 10,10'-(1,4-piperazinediyldi-3,1-

propanediyl)bis[N-[2-(dimethylamino)ethyl]- (9CI) (CA INDEX NAME)

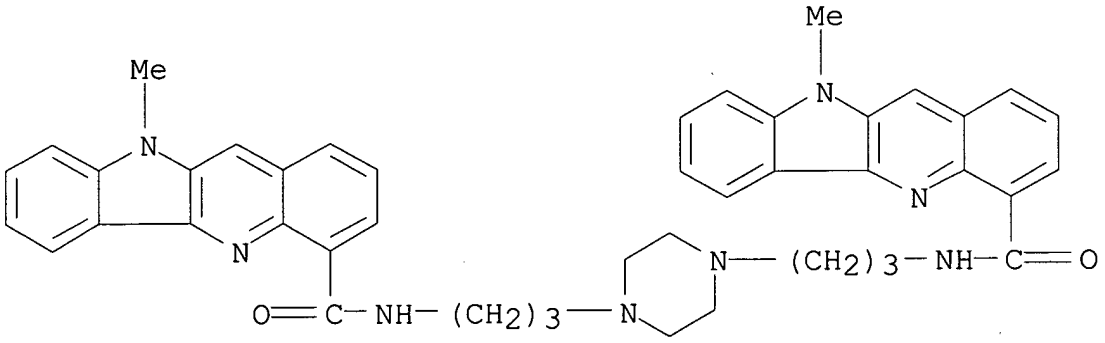
PAGE 1-A



PAGE 2-A

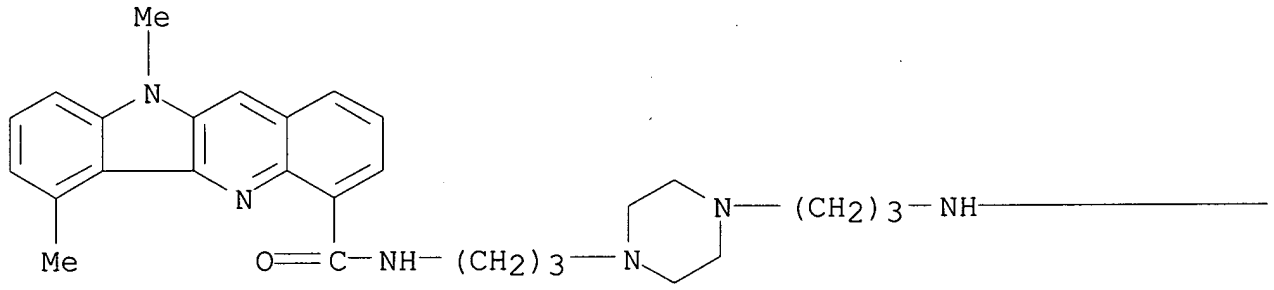


RN 473595-71-0 HCA
CN 10H-Quindoline-4-carboxamide, N,N'-(1,4-piperazinediyldi-3,1-propanediyl)bis[10-methyl- (9CI) (CA INDEX NAME)

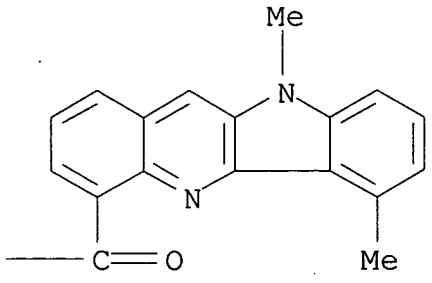


RN 473595-72-1 HCA
CN 10H-Quindoline-4-carboxamide, N,N'-(1,4-piperazinediyldi-3,1-propanediyl)bis[6,10-dimethyl- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B

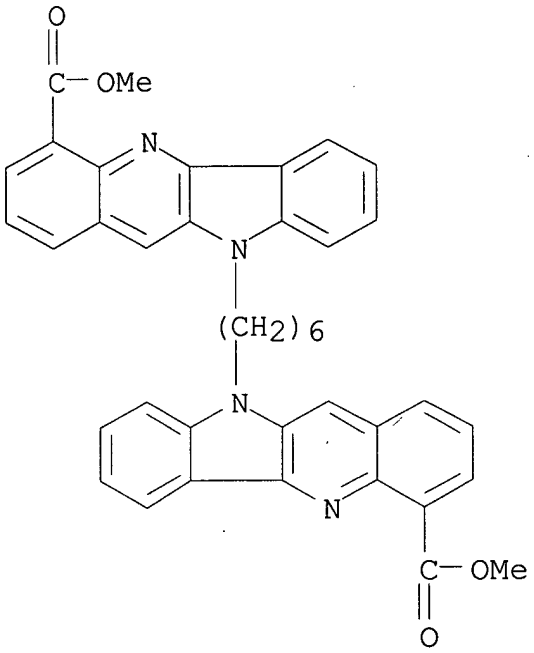


IT **473595-62-9P 473595-63-0P 473595-64-1P**
(synthesis and cytotoxic activity of N-(2-Diethylamino)ethylcarboxamide and other derivs. of

10H-Quindoline)

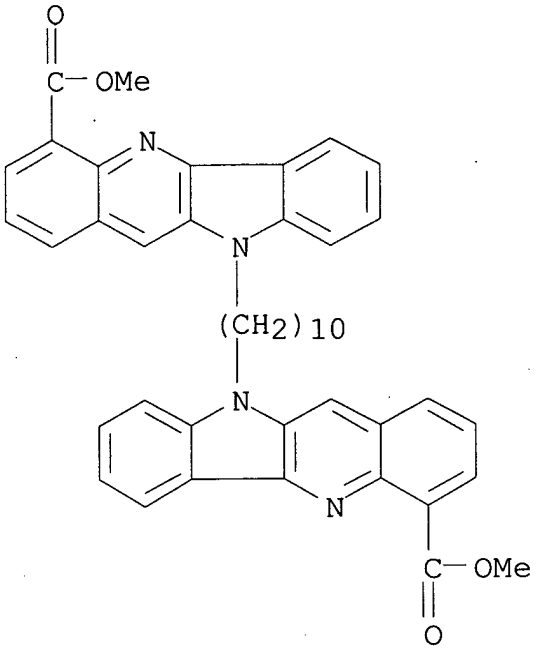
RN 473595-62-9 HCA

CN 10H-Quindoline-4-carboxylic acid, 10,10'-(1,6-hexanediyl)bis-, dimethyl ester (9CI) (CA INDEX NAME)



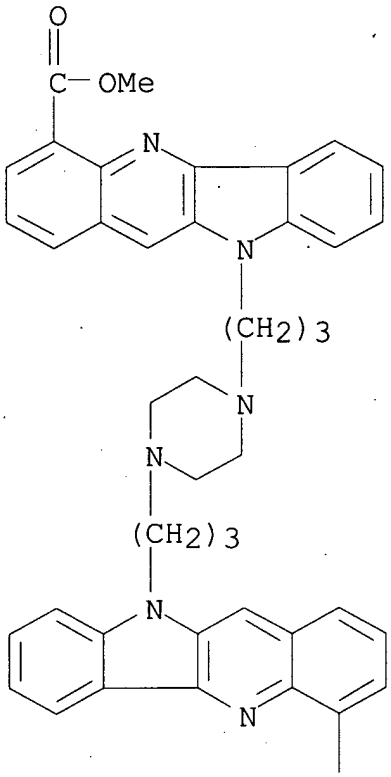
RN 473595-63-0 HCA

CN 10H-Quindoline-4-carboxylic acid, 10,10'-(1,10-decanediyl)bis-, dimethyl ester (9CI) (CA INDEX NAME)

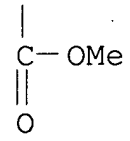


RN 473595-64-1 HCA
CN 10H-Quindoline-4-carboxylic acid, 10,10'-(1,4-piperazinediyldi-3,1-propanediyl)bis-, dimethyl ester (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



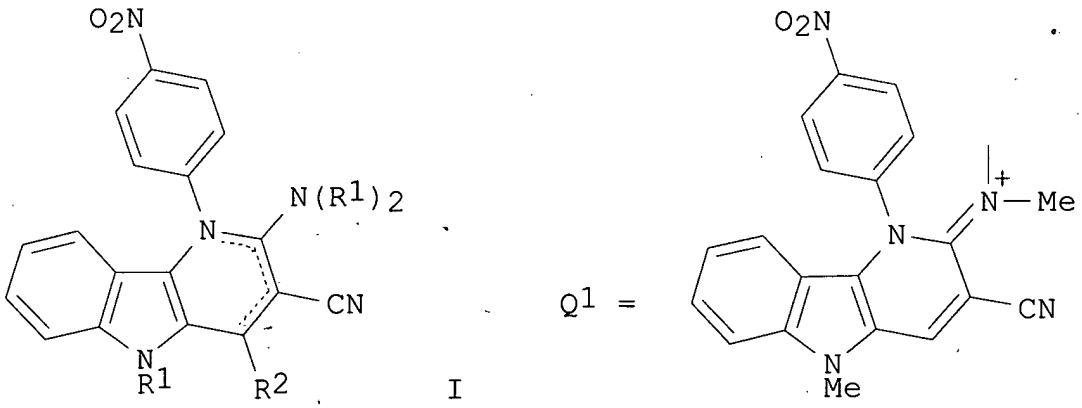
IT **473595-57-2P 473595-58-3P 473595-59-4P**
473595-60-7P 473595-71-0P 473595-72-1P
(synthesis and cytotoxic activity of N-(2-Diethylamino)ethylcarboxamide and other derivs. of 10H-Quindoline)

IT **473595-62-9P 473595-63-0P 473595-64-1P**
(synthesis and cytotoxic activity of N-(2-Diethylamino)ethylcarboxamide and other derivs. of 10H-Quindoline)

L14 ANSWER 4 OF 20 HCA COPYRIGHT 2007 ACS on STN

137:125149 Preparation of pyridoindoles as reverse transcriptase inhibitors.. Rice, William G.; Huang, Mingjun; Buckheit, Robert W., Jr.; Covell, David G.; Czerwinski, Grzegorz; Michejda, Christopher J. (The Government of the United States of America, Department of Health and Human Services, USA). PCT Int. Appl. WO 2002059123 A2 **20020801**, 62 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (English). CODEN: PIXXD2. APPLICATION: WO 2001-US48311 20011213. PRIORITY: US 2000-256581P 20001218.

GI

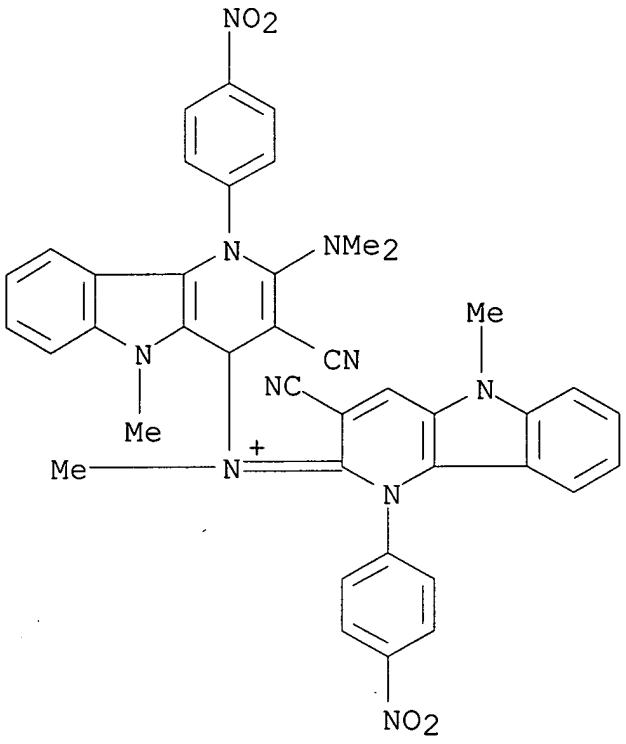


AB Title compds. (I; R1 = alkyl; R2 = H, alkyl, alkylamide, Q1; dotted lines = optional double bonds), were prepd. Thus, 1-(4-nitrophenyl)-2-methylimino-3-cyano-5-methyl-1,2-dihydro-5H-pyrido[3,2-b]indole (prepn. given) was refluxed with K2CO3, MeI, and acetone for 45 h to give 1-(4-nitrophenyl)-2-dimethylamino-3-cyano-4-(2-oxopropyl)-5-methyl-1,2-dihydro-5H-pyrido[3,2-b]indole. The latter showed IC50 = 0.1 μM against HIV-1 RF in CEM-SS cells.

IT **444197-43-7P**
(prepn. of pyridoindoles as reverse transcriptase inhibitors)

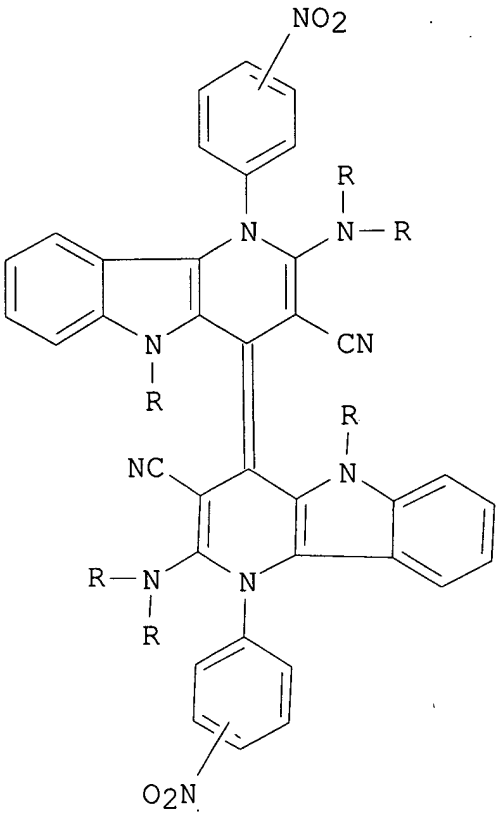
RN 444197-43-7 HCA

CN 1H-Pyrido[3,2-b]indol-4-aminium, 3-cyano-N-[3-cyano-1,5-dihydro-5-methyl-1-(4-nitrophenyl)-2H-pyrido[3,2-b]indol-2-ylidene]-2-(dimethylamino)-4,5-dihydro-N,5-dimethyl-1-(4-nitrophenyl)- (9CI) (CA INDEX NAME)

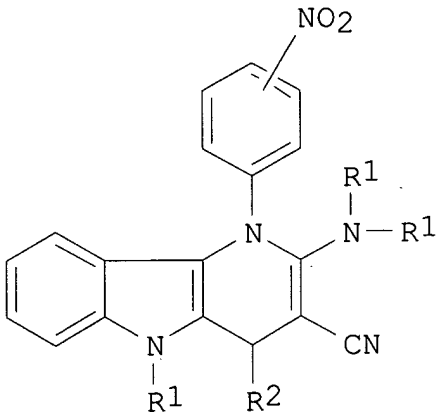


IT **444197-43-7P**
(prepn. of pyridoindoles as reverse transcriptase inhibitors)

L14 ANSWER 5 OF 20 HCA COPYRIGHT 2007 ACS on STN
137:93737 Preparation of pyridoindoles as anti-AIDS agents. Rice, William G.; Huang, Mingjun; Buckheit, Robert W., Jr.; Covell, David G.; Czerwinski, Grzegorz; Michejda, Christopher J. (The Government of the United States of America, Secretary of Health and Human Services, USA; Makarov, Vadim). PCT Int. Appl. WO 2002055520 A2 **20020718**, 49 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (English). CODEN: PIXXD2. APPLICATION: WO 2001-US48310 20011213. PRIORITY: US 2000-256556P 20001218.
GI



I



II

AB The title benzoylalkylindolepyridinium (BAIP) [sic] compds. I and II [wherein R and R1 = independently H or aliph.; R2 = CH2COCH3] were prepd. and tested for antiviral activity against several retroviruses. I inhibit the reserve transcriptase enzymes of several retroviruses, including human immunodeficiency virus (HIV). For example, deacylation of 3-(p-nitrophenylamino)indole (80%), followed by formylation (96%) and condensation with malonitrile (80%), afforded the (aminoindolylmethylidenyl)malononitrile intermediate. Cyclization to the 2-imino-1,2-dihydro-5H-pyrido[3,2-b]indole (60%). Methylation with MeI in acetone in the presence of anhyd. K2CO3 produced the unexpected 2-oxopropyl product I (R1 = Me; R2 = CH2COCH3; p-nitrophenyl) (III). The latter exerted antiretroviral activity against HIV-1RF, HIV-2ROD, and SIV in a std. screening cytoprotection assay with EC50 values of 0.1 μM, 4.79 μM, and 5.65 μM, resp., and CC50 values > 200 μM. Further studies demonstrated that III acts during the late phase of infection, after the provirus has integrated into the host cell genome, and that cells treated with III showed reduced virion-assocd. reverse transcriptase activity and viral infectivity levels. I and II are useful for therapy to individuals already

carrying HIV-1 variants that are resistant to AZT or classical non-nucleoside reverse transcriptase inhibitors (no data).

IT **442149-80-6P**
(antiretroviral agent; prepn. of pyridoindole anti-AIDS agents via cyclization and subsequent derivatization of (aminoindolylmethylidenyl)malononitrile)

RN 442149-80-6 HCA

CN 1H-Pyrido[3,2-b]indole-3-carbonitrile, 4-[3-cyano-2-(dimethylamino)-1,5-dihydro-5-methyl-1-(4-nitrophenyl)-4H-pyrido[3,2-b]indol-4-ylidene]-2-(dimethylamino)-4,5-dihydro-5-methyl-1-(4-nitrophenyl)- (9CI) (CA INDEX NAME)

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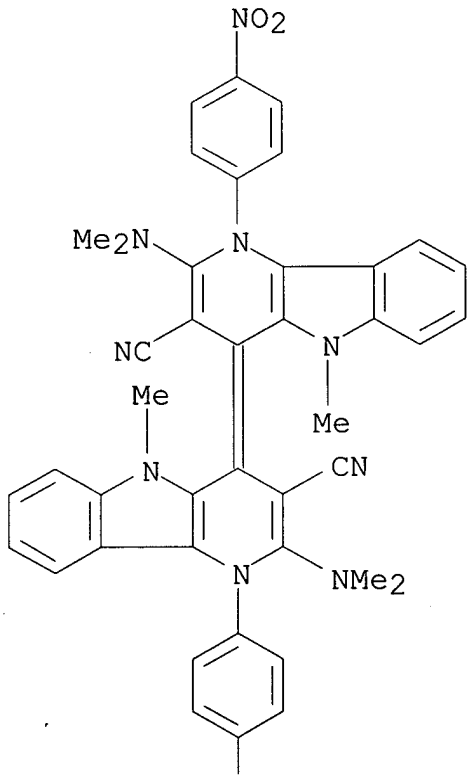


PAGE 2-A

IT **442149-80-6P**

(antiretroviral agent; prepn. of pyridoindole anti-AIDS agents via cyclization and subsequent derivatization of (aminoindolylmethylidenyl)malononitrile)

L14 ANSWER 6 OF 20 HCA COPYRIGHT 2007 ACS on STN
130:339362 Tetrapyrazinoindoloporphyrazines. Matsuoka, Masaru; Tei, Zirin; Fukunishi, Koji; Takahashi, Hiroshi (Nippon Soda Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 11116573 A **19990427** Heisei, 13 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1997-282104 19971015.
GI

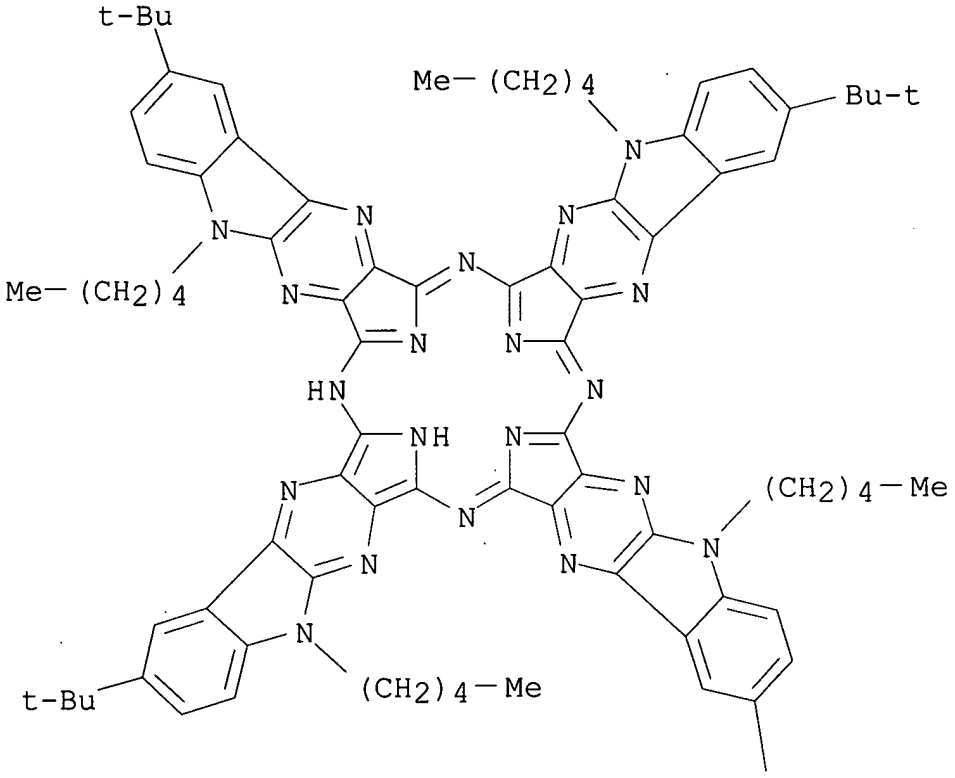
* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB Claimed are title compds. I [R = H, (substituted) C1-18 alkyl, C2-18 alkenyl, C2-18 alkynyl, C7-12 aralkyl] or their salts useful as dyes for optical recording media, photoreceptors for electrophotog. or laser printers, etc. (no data). Thus, 2,3-dicyano-5-amyl-8-tert-butyl-2,3-pyrazino[2,3-b]indol (prepd. from 4-tert-butylcyclohexanone, amylamine, and 2,3-dichloro-5,6-dicyanopyrazine) was treated with DBU in EtOH under reflux for 48 h to give 40% I (R = amyl).

IT **215318-02-8P 215318-04-0P 215318-06-2P**
215318-08-4P 215318-10-8P 215318-12-0P
215318-14-2P
(prepn. of tetrapyrazinoindoloporphyrazines for optical recording or electrophotog.)

RN 215318-02-8 HCA
CN 5H,15H,41H,43H-Tetrakisindolo[2',3':5,6]pyrazino[2,3-b:2',3'-g:2'',3''-l:2''',3'''-q]porphyrazine, 2,12,22,32-tetrakis(1,1-dimethylethyl)-25,35-dihydro-5,15,25,35-tetrapentyl- (9CI) (CA INDEX NAME)

PAGE 1-A

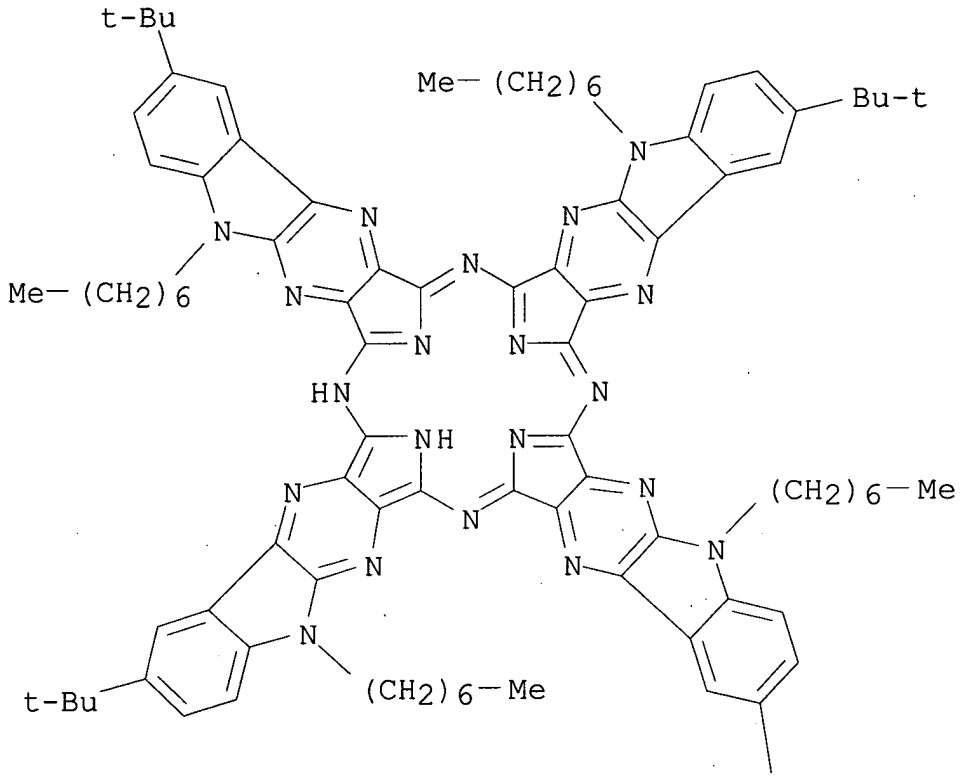


PAGE 2-A

Bu-t

RN 215318-04-0 HCA
CN 5H,15H,41H,43H-Tetrakisindolo[2',3':5,6]pyrazino[2,3-b:2',3'-g:2'',3''-l:2''',3'''-q]porphyrazine, 2,12,22,32-tetrakis(1,1-dimethylethyl)-5,15,25,35-tetraheptyl-25,35-dihydro- (9CI) (CA INDEX NAME)

PAGE 1-A

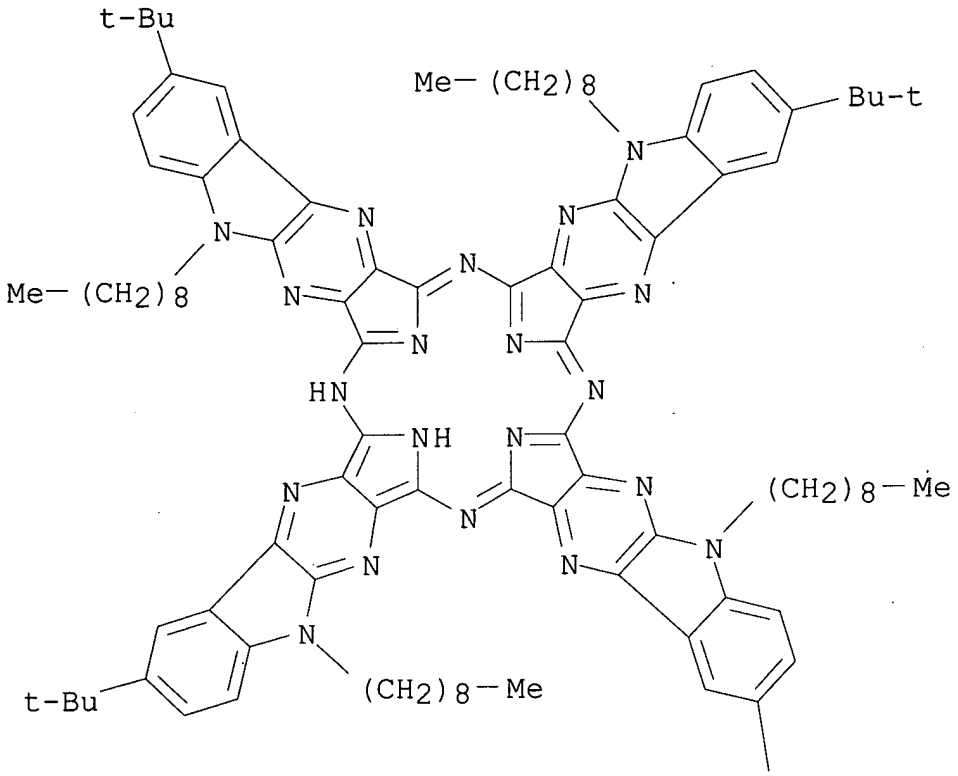


PAGE 2-A

Bu-t

RN 215318-06-2 HCA
CN 5H,15H,41H,43H-Tetrakisindolo[2',3':5,6]pyrazino[2,3-b:2',3'-g:2'',3''-l:2''',3'''-q]porphyrazine, 2,12,22,32-tetrakis(1,1-dimethylethyl)-25,35-dihydro-5,15,25,35-tetranonyl- (9CI) (CA INDEX NAME)

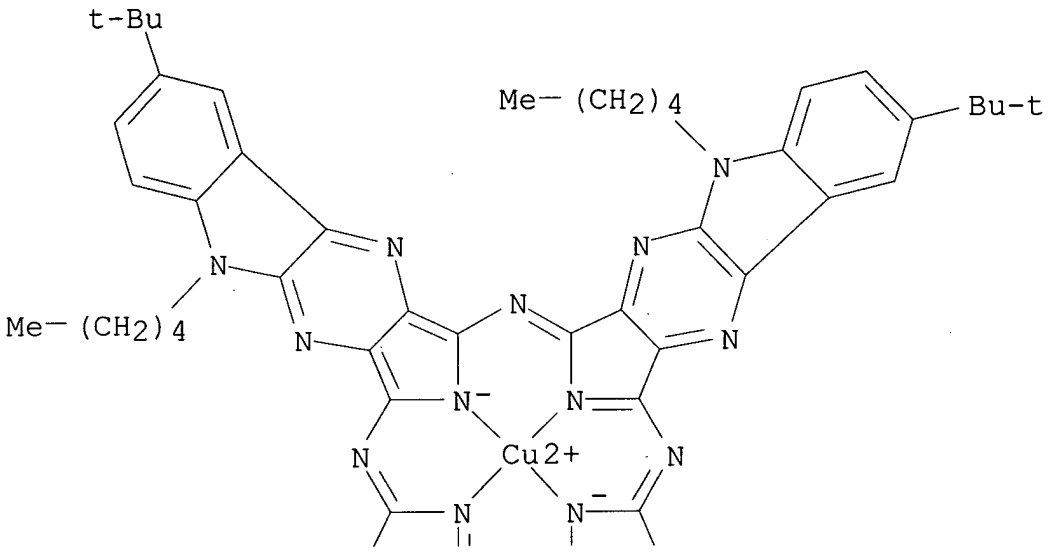
PAGE 1-A



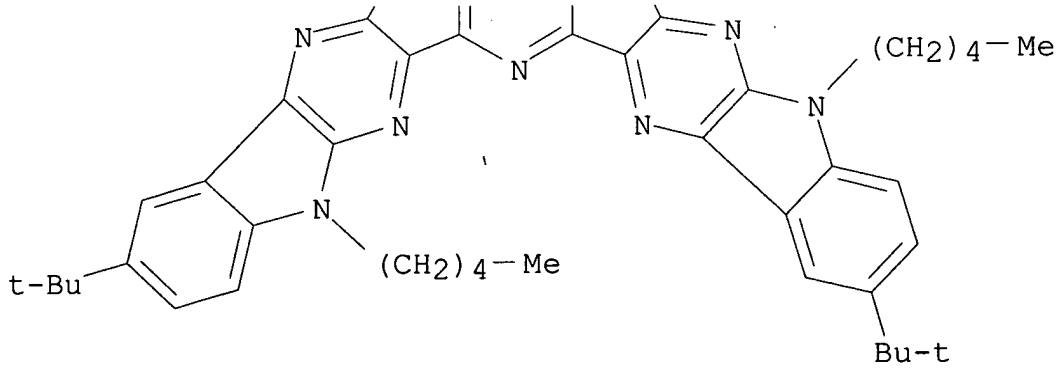
PAGE 2-A

RN 215318-08-4 HCA
CN Copper, [2,12,22,32-tetrakis(1,1-dimethylethyl)-15,35-dihydro-5,15,25,35-tetrapentyl-5H,25H,41H,43H-tetrakisindolo[2',3':5,6]pyrazino[2,3-b:2',3'-g:2'',3''-l:2''',3'''-q]porphyrazinato(2-)-κN41,κN42,κN43,κN44]-, (SP-4-1)- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



RN 215318-10-8 HCA
CN Copper, [2,12,22,32-tetrakis(1,1-dimethylethyl)-5,15,25,35-tetraheptyl-15,35-dihydro-5H,25H,41H,43H-tetrakisindolo[2',3':5,6]pyrazino[2,3-b:2',3'-g:2'',3''-l:2''',3'''-

q]porphyrazinato(2-)-κN41,κN42,κN43,κN44]-,
(SP-4-1)- (9CI) (CA INDEX NAME)

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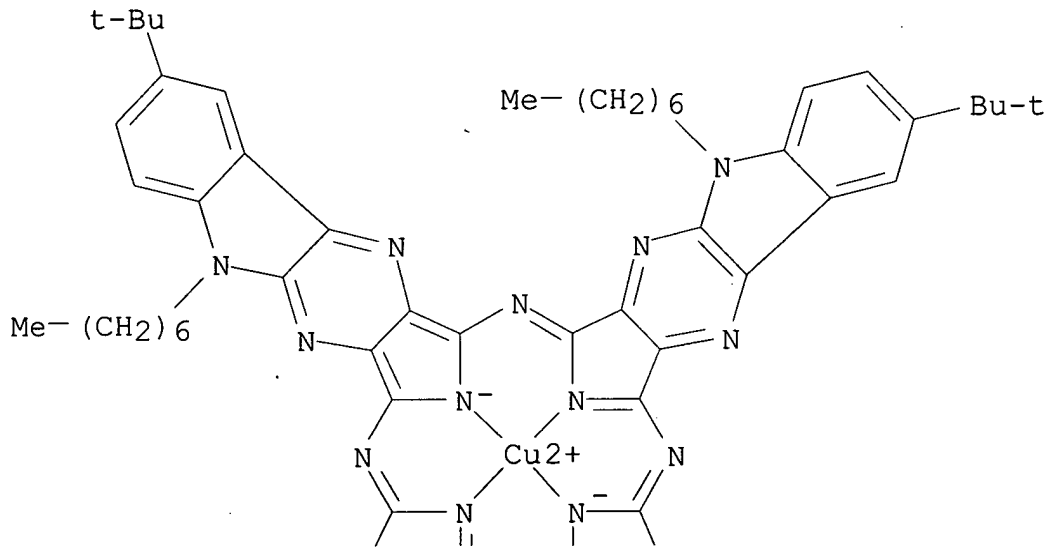

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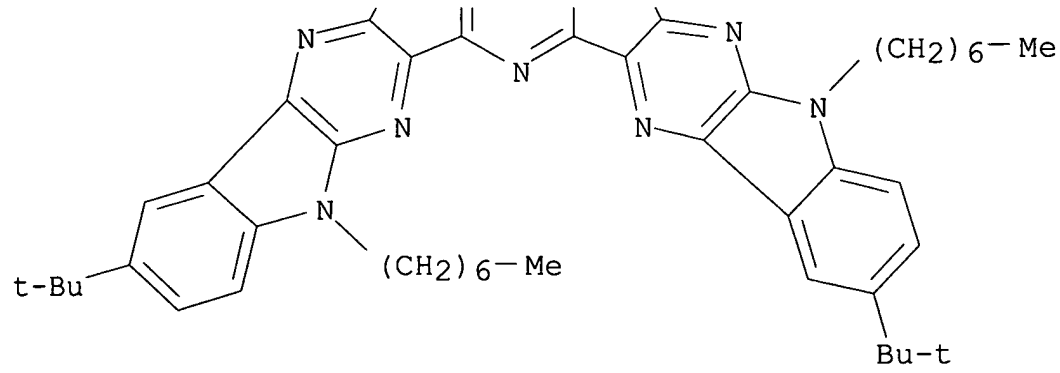

RN 215318-12-0 HCA

CN Copper, [2,12,22,32-tetrakis(1,1-dimethylethyl)-15,35-dihydro-5,15,25,35-tetranonyl-5H,25H,41H,43H-tetrakisindolo[2',3':5,6]pyrazino[2,3-b:2',3'-g:2'',3''-l:2''',3'''-q]porphyrazinato(2-)-κN41,κN42,κN43,κN44]-, (SP-4-1)- (9CI) (CA INDEX NAME)

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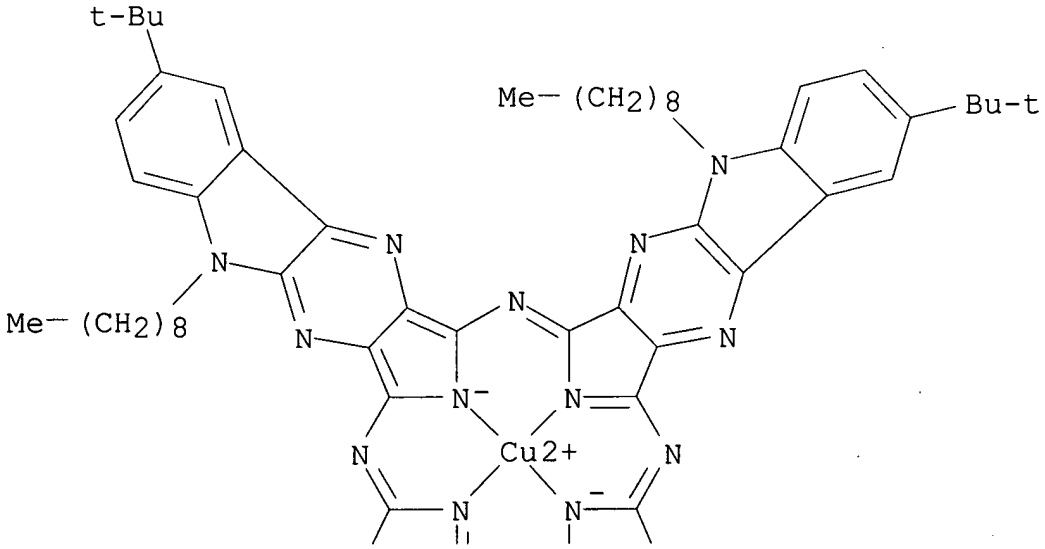
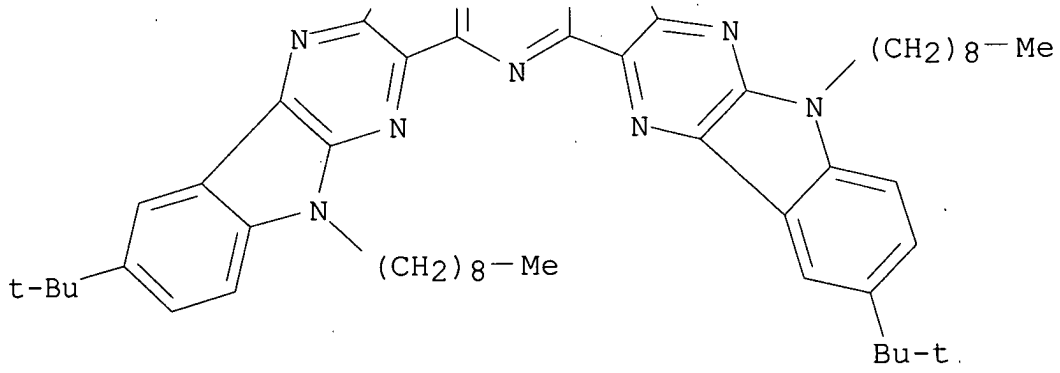
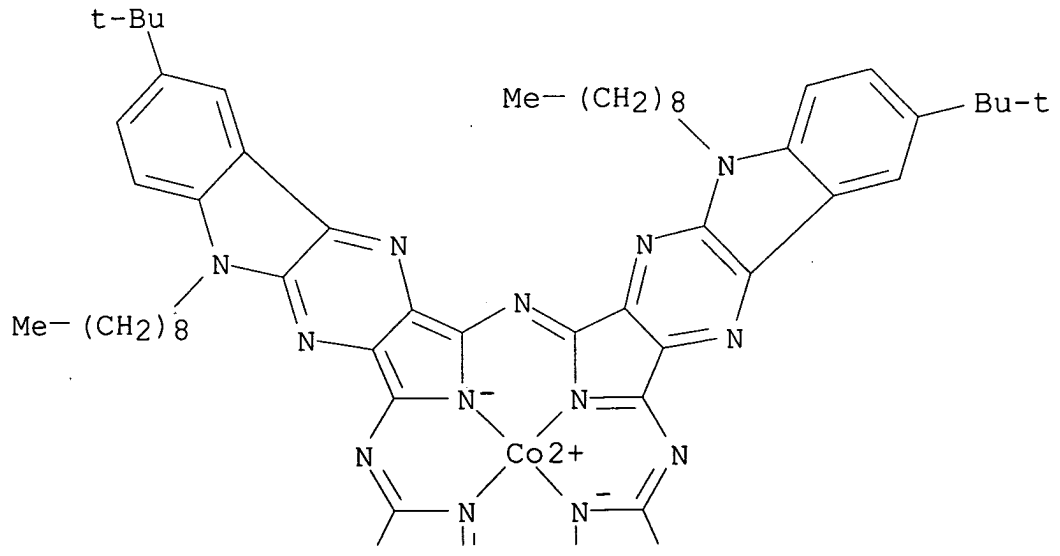


PAGE 2-A

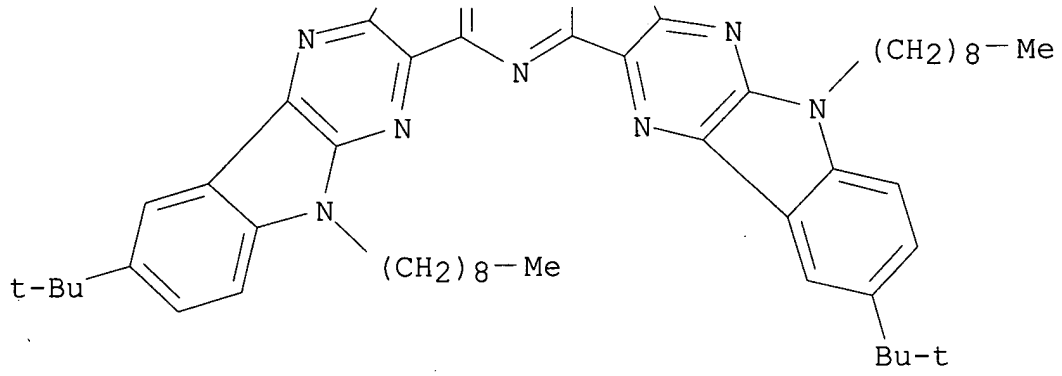


RN 215318-14-2 HCA
CN Cobalt, [2,12,22,32-tetrakis(1,1-dimethylethyl)-15,35-dihydro-5,15,25,35-tetranonyl-5H,25H,41H,43H-tetrakisindolo[2',3':5,6]pyrazino[2,3-b:2',3'-g:2'',3''-l:2''',3'''-q]porphyrazinato(2-)-κN41,κN42,κN43,κN44]-, (SP-4-1)- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



IT **215318-02-8P 215318-04-0P 215318-06-2P 215318-08-4P 215318-10-8P 215318-12-0P 215318-14-2P**
(prepn. of tetrapyrazinoindoloporphyrazines for optical recording or electrophotog.)

L14 ANSWER 7 OF 20 HCA COPYRIGHT 2007 ACS on STN
129:330716 Syntheses and characterization of push-pull tetrapyrazino[2,3-b]indoloporphyrazines. Jaung, Jae-Yun; Matsuoka, Masaru; Fukunishi, Koushi (Department Chemistry Materials Technology, Kyoto Institute Technology, Kyoto, 606, Japan). Synthesis (9), 1347-1351 (English) **1998**. CODEN: SYNTBF. ISSN: 0039-7881. OTHER SOURCES: CASREACT 129:330716. Publisher: Georg Thieme Verlag.

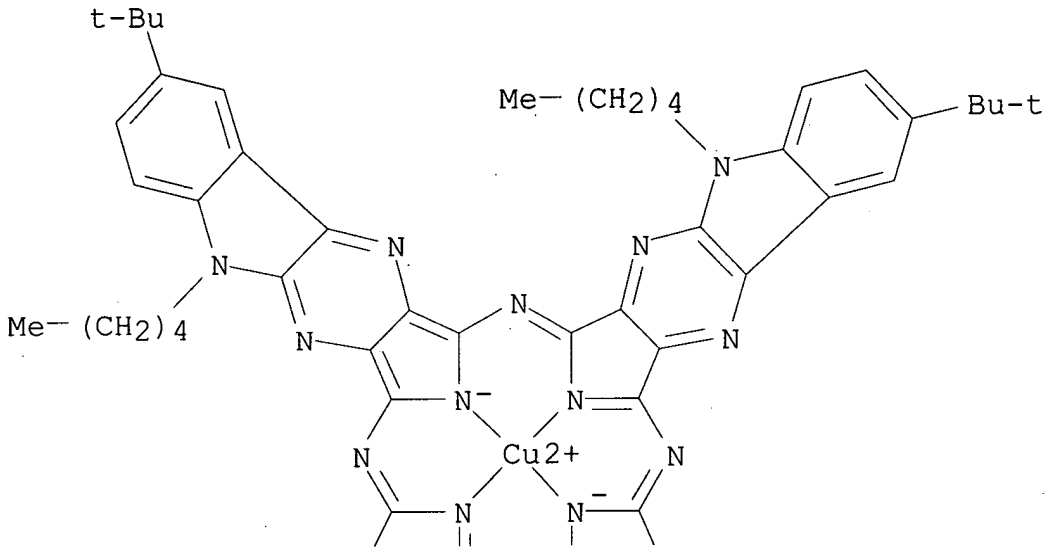
AB The synthesis of tetrakis(indolopyrazino)porphyrazines by ring-closure reactions of 2,3-dichloro-5,6-dicyanopyrazine with enamines is described. Alkylated tetrakis(indolopyrazino)porphyrazines have push-pull intramol. charge-transfer chromophoric systems and show good soly. in most org. solvents. Large spectral changes caused by mol. aggregation of these dyes affected by solvent polarity and temp. were studied.

IT **215318-08-4P 215318-10-8P 215318-12-0P**
(UV and mol. aggregation)

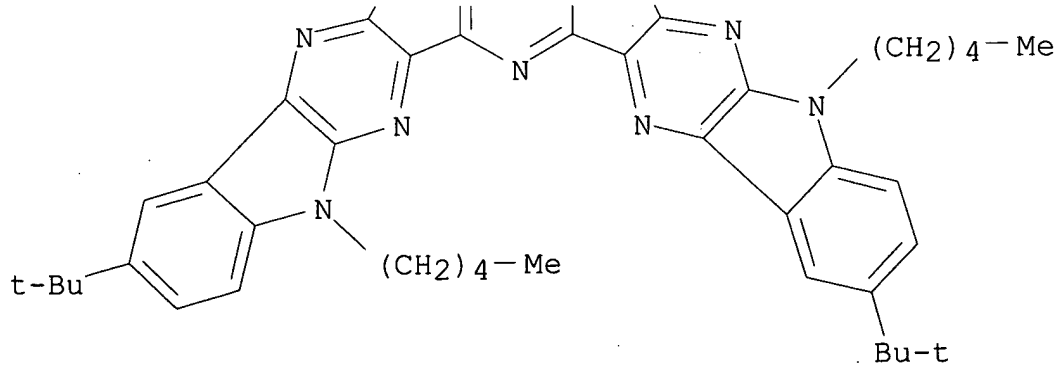
RN 215318-08-4 HCA

CN Copper, [2,12,22,32-tetrakis(1,1-dimethylethyl)-15,35-dihydro-5,15,25,35-tetrapentyl-5H,25H,41H,43H-tetrakisindolo[2',3':5,6]pyrazino[2,3-b:2',3'-g:2'',3''-l:2''',3'''-q]porphyrazinato(2-)-κN41,κN42,κN43,κN44]-, (SP-4-1)- (9CI) (CA INDEX NAME)

PAGE 1-A



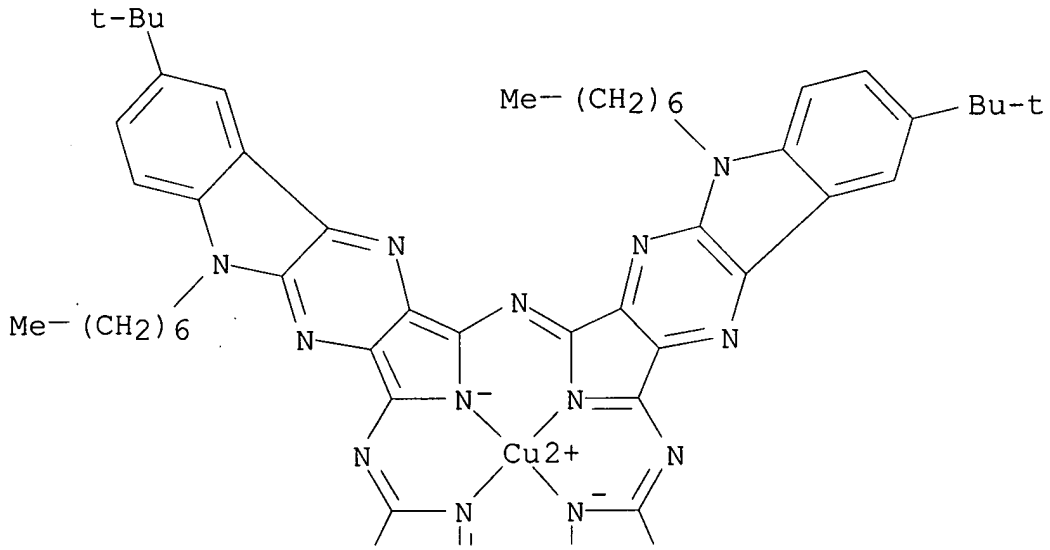
PAGE 2-A



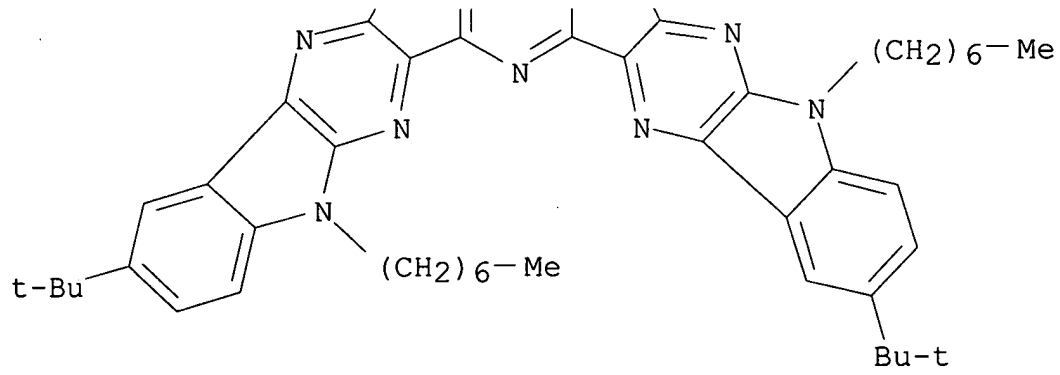
RN 215318-10-8 HCA
CN Copper, [2,12,22,32-tetrakis(1,1-dimethylethyl)-5,15,25,35-tetraheptyl-15,35-dihydro-5H,25H,41H,43H-tetrakisindolo[2',3':5,6]pyrazino[2,3-b:2',3'-g:2'',3''-l:2''',3'''-

q]porphyrazinato(2-)-κN41,κN42,κN43,κN44]-,
(SP-4-1)- (9CI) (CA INDEX NAME)

PAGE 1-A



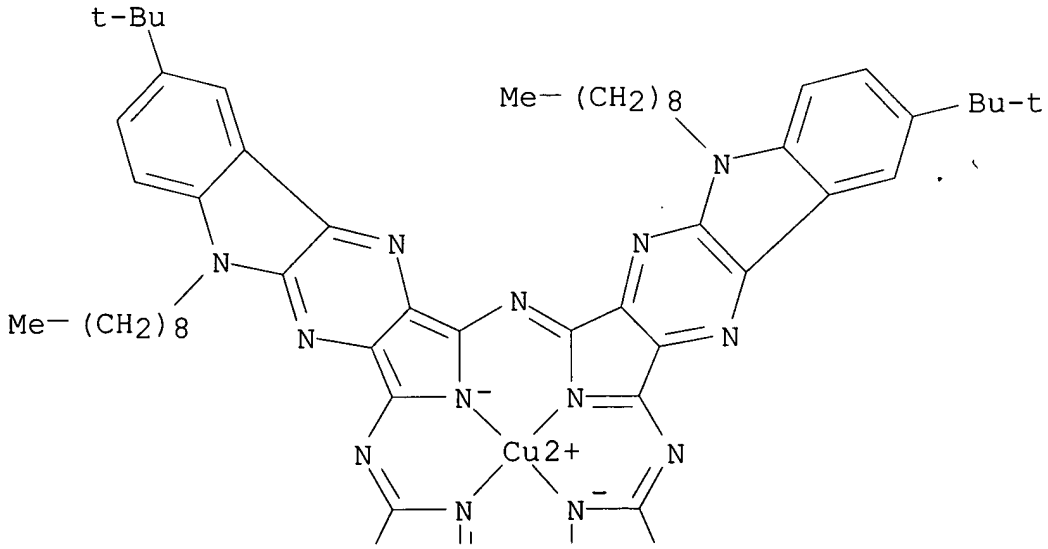
PAGE 2-A



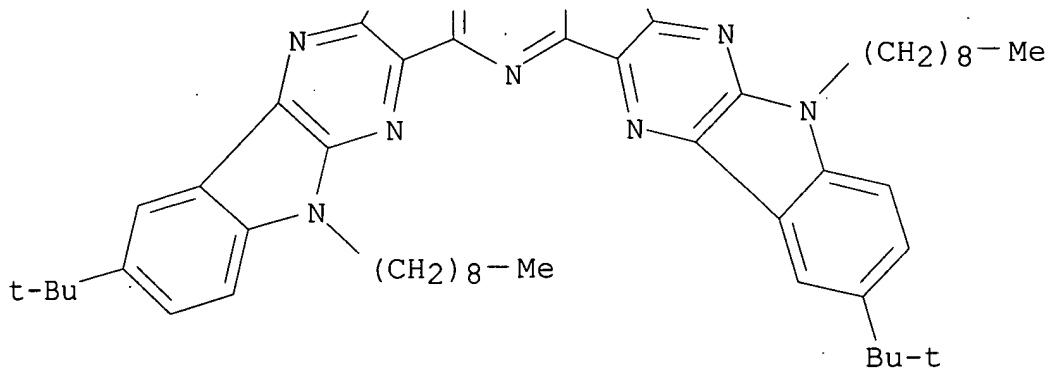
RN 215318-12-0 HCA

CN Copper, [2,12,22,32-tetrakis(1,1-dimethylethyl)-15,35-dihydro-5,15,25,35-tetranonyl-5H,25H,41H,43H-tetrakisindolo[2',3':5,6]pyrazino[2,3-b:2',3'-g:2'',3''-l:2''',3'''-q]porphyrazinato(2-)-κN41,κN42,κN43,κN44]-, (SP-4-1)- (9CI) (CA INDEX NAME)

PAGE 1-A

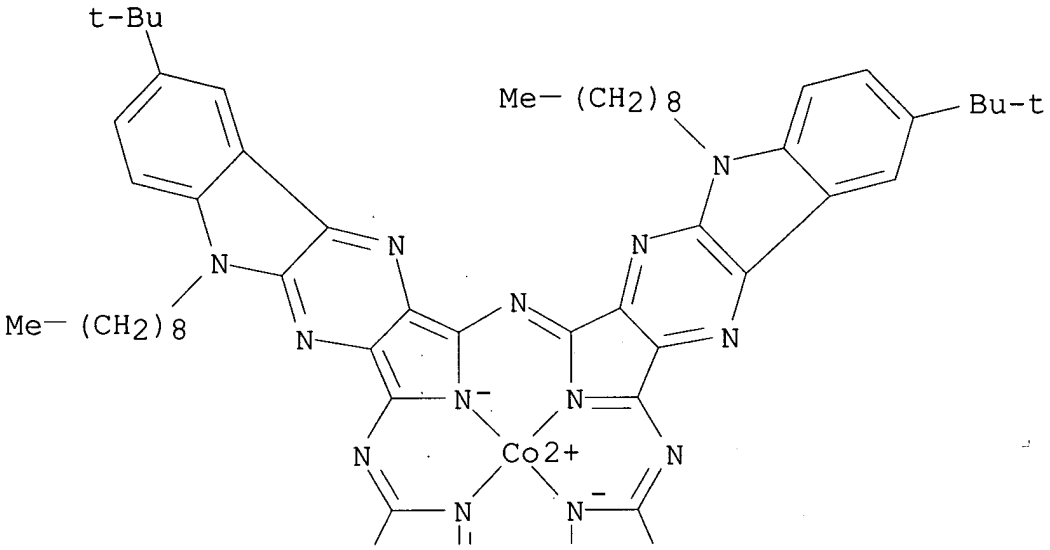


PAGE 2-A

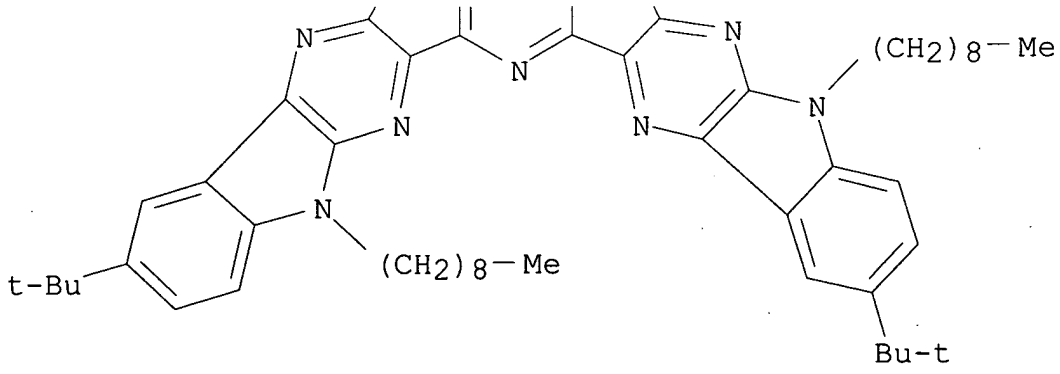


IT **215318-14-2P**
(prepn. of push-pull indolopyrazinoporphyrazines)
RN 215318-14-2 HCA
CN Cobalt, [2,12,22,32-tetrakis(1,1-dimethylethyl)-15,35-dihydro-5,15,25,35-tetranonyl-5H,25H,41H,43H-tetrakisindolo[2',3':5,6]pyrazino[2,3-b:2',3'-g:2'',3''-l:2''',3'''-q]porphyrazinato(2-)-κN41,κN42,κN43,κN44]-, (SP-4-1)- (9CI) (CA INDEX NAME)

PAGE 1-A



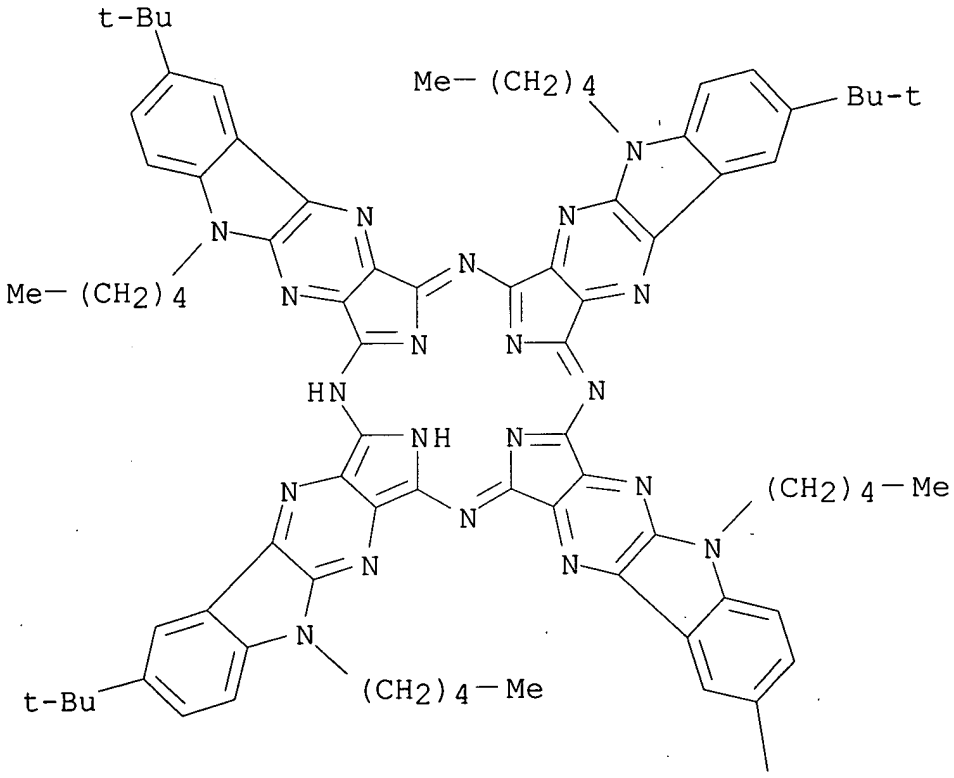
PAGE 2-A



IT **215318-02-8P 215318-04-0P 215318-06-2P**
(prepn., UV, mol. aggregation, and metal complexation)
RN 215318-02-8 HCA
CN 5H,15H,41H,43H-Tetrakisindolo[2',3':5,6]pyrazino[2,3-b:2',3'-

g:2'',3''-l:2''',3'''-q]porphyrazine, 2,12,22,32-tetrakis(1,1-dimethylethyl)-25,35-dihydro-5,15,25,35-tetrapentyl- (9CI) (CA INDEX NAME)

PAGE 1-A

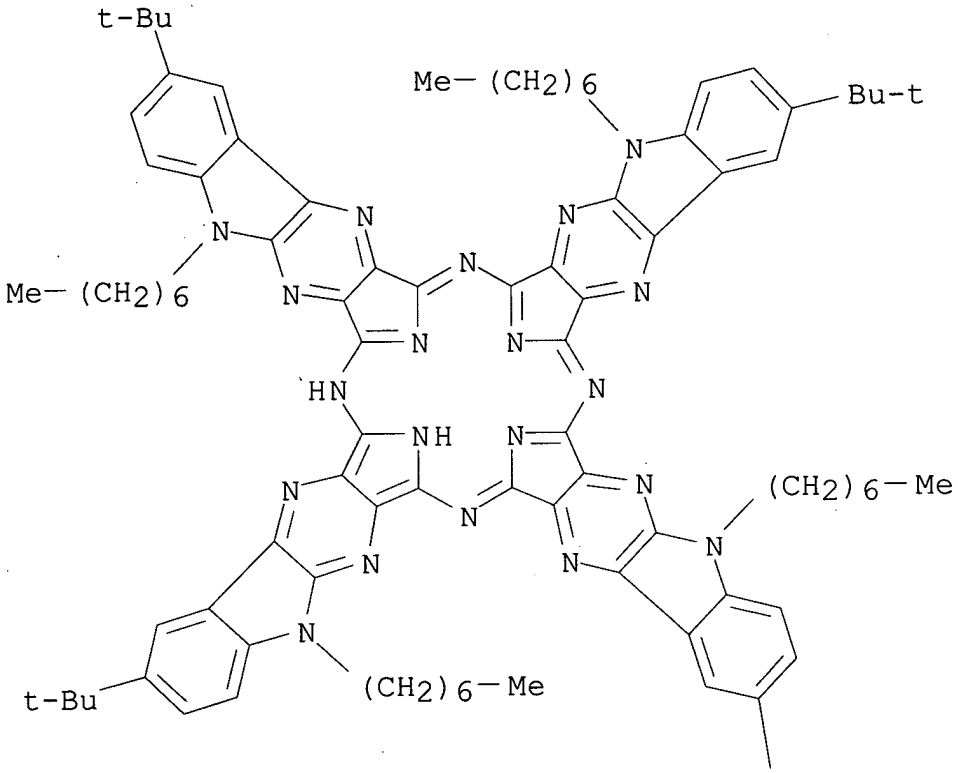


PAGE 2-A

Bu-t

RN 215318-04-0 HCA
CN 5H,15H,41H,43H-Tetrakisindolo[2',3':5,6]pyrazino[2,3-b:2',3'-g:2'',3''-l:2''',3'''-q]porphyrazine, 2,12,22,32-tetrakis(1,1-dimethylethyl)-5,15,25,35-tetraheptyl-25,35-dihydro- (9CI) (CA INDEX NAME)

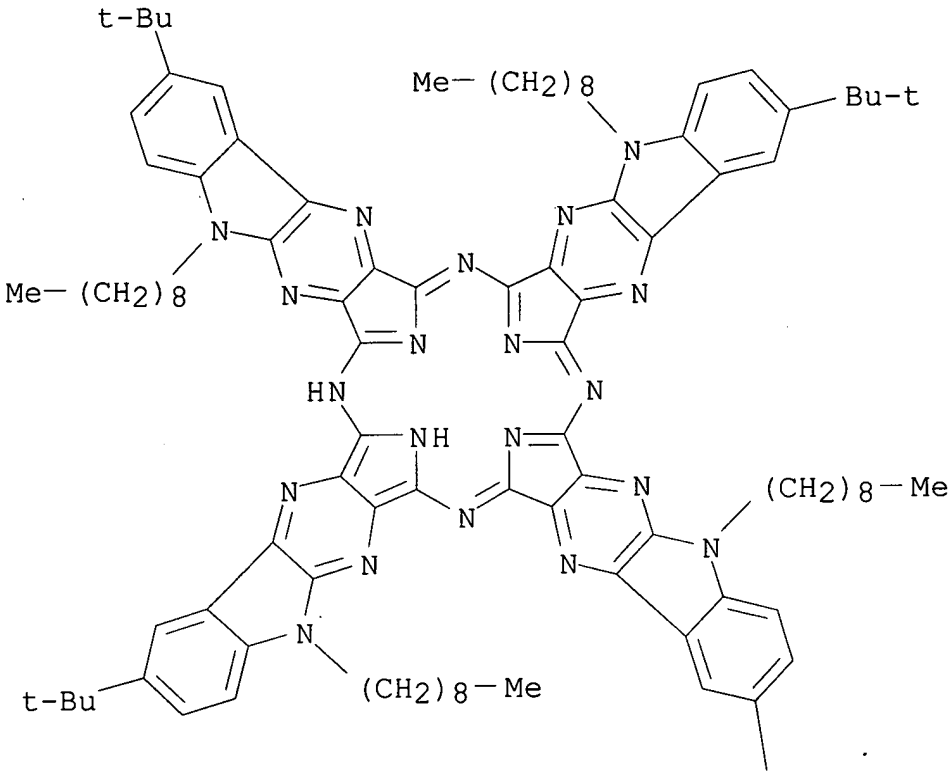
PAGE 1-A



PAGE 2-A

RN 215318-06-2 HCA
CN 5H,15H,41H,43H-Tetrakisindolo[2',3':5,6]pyrazino[2,3-b:2',3'-g:2'',3''-l:2''',3'''-q]porphyrazine, 2,12,22,32-tetrakis(1,1-dimethylethyl)-25,35-dihydro-5,15,25,35-tetranonyl- (9CI) (CA INDEX NAME)

PAGE 1-A



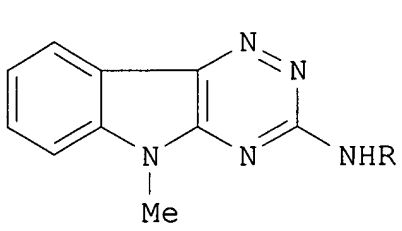
PAGE 2-A

IT **215318-08-4P 215318-10-8P 215318-12-0P**
(UV and mol. aggregation)
IT **215318-14-2P**
(prepn. of push-pull indolopyrazinoporphyrazines)
IT **215318-02-8P 215318-04-0P 215318-06-2P**
(prepn., UV, mol. aggregation, and metal complexation)

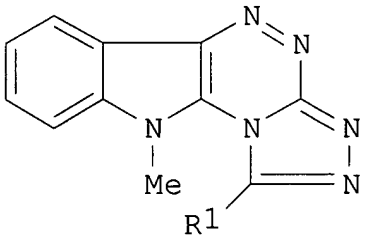
L14 ANSWER 8 OF 20 HCA COPYRIGHT 2007 ACS on STN
129:230931 Acyclo C-nucleoside analogs. Regioselective annelation of a triazole ring to 5-methyl-1,2,4-triazino[5,6-b]indole and formation of certain 3-poly hydroxyalkyl derivatives. Rashed, Nagwa; Abdel Hamid, Hamida; Ramadan, El Sayed; El Ashry, El Sayed H. (Chemistry Department, Faculty of Science, Alexandria University, Alexandria,

Egypt). Nucleosides & Nucleotides, 17(8), 1373-1384 (English) **1998**. CODEN: NUNUD5. ISSN: 0732-8311. OTHER SOURCES: CASREACT 129:230931. Publisher: Marcel Dekker, Inc..

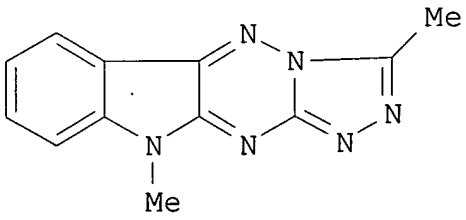
GI



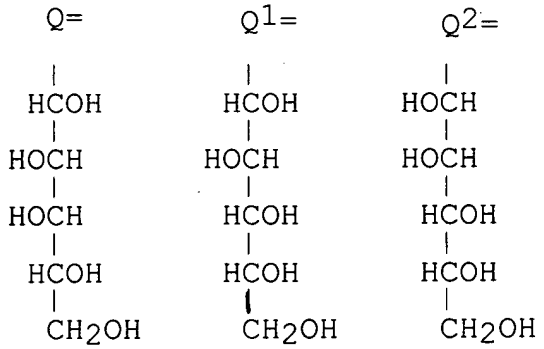
I



II



III



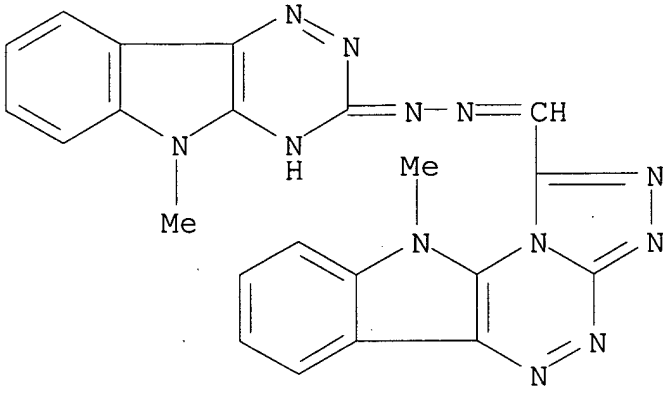
AB Cyclodehydrogenation (oxidative cyclization) of the ethylidene deriv. (I; R = N:CHMe) of (5-methyl-1,2,4-triazino[5,6-b]indol-3-yl)hydrazine by FeCl3/EtOH or Pd/C gave the angular isomer, 1,10-dimethyl-1,2,4-triazolo[3',4':3,4][1,2,4]triazino[5,6-b]indole (II; R1 = Me). The linear isomer, 3,10-dimethyl-1,2,4-triazolo[4',3':2,3][1,2,4]triazino[5,6-b]indole (III) could be prepd. regioselectively by the cyclodehydration of the acetyl deriv. I (R = NHCOMe). The cyclodehydrogenation was extended to the monosaccharide derivs. I (R = N:CH(CHOH)nOH, wherein n = 4 or 5; in particular (CHOH)nOH = Q, Q1, Q2) to give acyclo C-nucleoside analogs contg. 1,2,4-triazolo[3',4':3,4][1,2,4]triazino[5,6-b]indole ring II (R1 = Q, Q1, Q2). The role of the N-Me group on the site of annelation has been discussed.

IT **212844-36-5P**
(prepn. of acyclo C-nucleoside analogs by regioselective annelation of triazole ring to methyltriazinoindole and formation of certain 3-poly hydroxyalkyl derivs.)

RN 212844-36-5 HCA

for reference ask Library

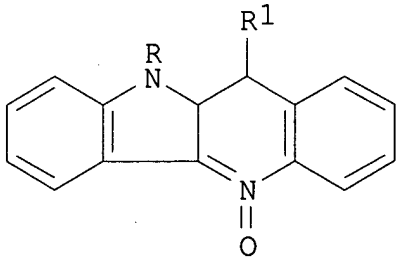
CN 10H-[1,2,4]Triazolo[3',4':3,4][1,2,4]triazino[5,6-b]indole-1-carboxaldehyde, 10-methyl-, (5-methyl-5H-1,2,4-triazino[5,6-b]indol-3-yl)hydrazone (9CI) (CA INDEX NAME)



IT **212844-36-5P**
(prepn. of acyclo C-nucleoside analogs by regioselective annelation of triazole ring to methyltriazinoindole and formation of certain 3-poly hydroxyalkyl derivs.)

L14 ANSWER 9 OF 20 HCA COPYRIGHT 2007 ACS on STN
128:114888 10H-Indolo[3,2-b]quinoline 5-oxide (oxyquindoline) and some of its derivatives. Goerlitzer, K.; Ventzke-Neu, K. (Institut Pharmazeutische Chemie, Technische Universitaet Braunschweig, Braunschweig, D-38106, Germany). Pharmazie, 52(12), 919-926 (German) **1997**. CODEN: PHARAT. ISSN: 0031-7144. OTHER SOURCES: CASREACT 128:114888. Publisher: Govi-Verlag Pharmazeutischer Verlag.

GI



I

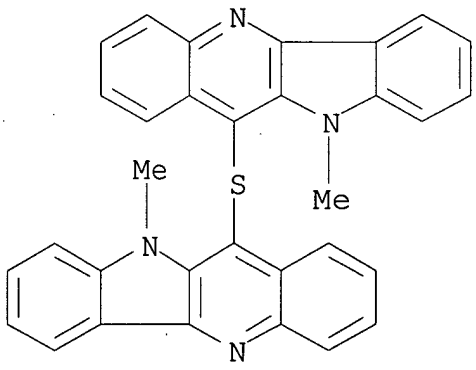
AB The 'oxyquindolinone' product from the condensation of di-Et malonate with 2-O2NC6H4CH2Cl is shown to be an N-oxide of the same ring system. Treating alkoxyindole I (R = OCH2CO2Et, R1 = H),

prepd. from the dioxyquindoline and BrCH2CO2Et, with Et3N gave title compd. I (R, R1 = H). The N-oxide I (R = OCH2CO2Me, R1 = OAc) received from I (R = OCH2CO2Me, R1 = H) reacts with NaOEt to give the vinylogous hydroxamic acid I (R = H, R1 = OH). The transformation of I (R, R1 = H) to the quindolinone is described. Compd. I (R, R1 = H) was submitted to nitration with following redn., acetylations, methylation, and halogenation. The 11-thio- and the 11-alkoxyquindolines were synthesized from 11-chloroquindolines and quindolinones, resp.

IT **201791-23-3P**
(prepn. of indoloquinoline oxide and derivs.)

RN 201791-23-3 HCA

CN 10H-Quindoline, 11,11'-thiobis[10-methyl- (9CI) (CA INDEX NAME)

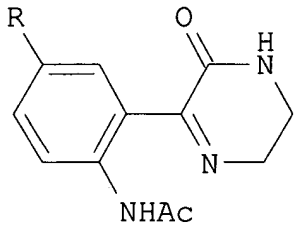


IT **201791-23-3P**
(prepn. of indoloquinoline oxide and derivs.)

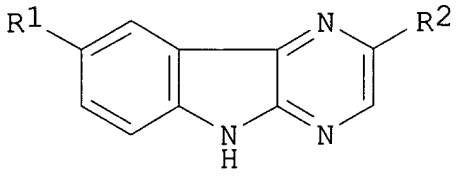
L14 ANSWER 10 OF 20 HCA COPYRIGHT 2007 ACS on STN

127:190705 Synthesis of 5H-pyrazino[2,3-b]indoles from indole-2,3-dione derivatives. Bergman, Jan; Vallberg, Hans (Department of Organic Chemistry, Royal Institute of Technology, Stockholm, S-100 44, Swed.). Acta Chemica Scandinavica, 51(6/7), 742-752 (English) **1997**. CODEN: ACHSE7. ISSN: 0904-213X. Publisher: Munksgaard.

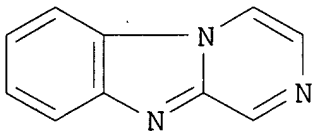
GI



I



II



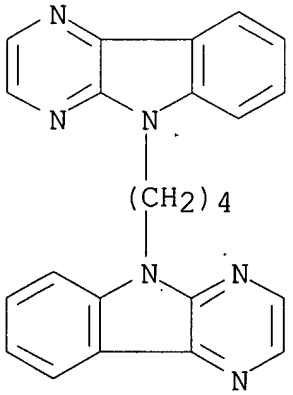
III

AB Reaction of N-acetylindol-2,3-diones with ethylenediamines gave the dihydropyrazinones I (R = H, Br, OMe, NO2), which could, after dehydrogenation and deacetylation, be transformed to the corresponding 5H-pyrazino[2,3-b]indoles II (R1 = H, R2 = H, Me, Et; R1 = Br, R2 = H). N,N-Dimethylaminoethylation of the anion of II occurred selectively in the 5-position. Thermolysis of 1-pyrazinylbenzotriazole gave pyrazino[1,2-a]benzimidazole III and no 5H-pyrazino[2,3-b]indole.

IT **193959-79-4P**
(prepn. of pyrazinoindoles from indoledione derivs.)

RN 193959-79-4 HCA

CN 5H-Pyrazino[2,3-b]indole, 5,5'-(1,4-butanediyl)bis- (9CI) (CA INDEX NAME)

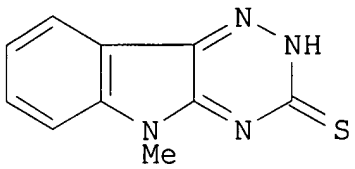


IT **193959-79-4P**
(prepn. of pyrazinoindoles from indoledione derivs.)

L14 ANSWER 11 OF 20 HCA COPYRIGHT 2007 ACS on STN

122:81312 Novel heterocyclics from 3-substituted 5H-1,2,4-triazino[5,6-b]indoles and π-acceptors. Hassan, Alaa A.; Mohamed, Nasr K.; Ali, Bahaa A.; Mourad, Aboul-Fetouh E. (Fac. Sci., El-Minia Univ., El-Minia, Egypt). Tetrahedron, 50(33), 9997-10010 (English) **1994**. CODEN: TETRAB. ISSN: 0040-4020. OTHER SOURCES: CASREACT 122:81312.

GI



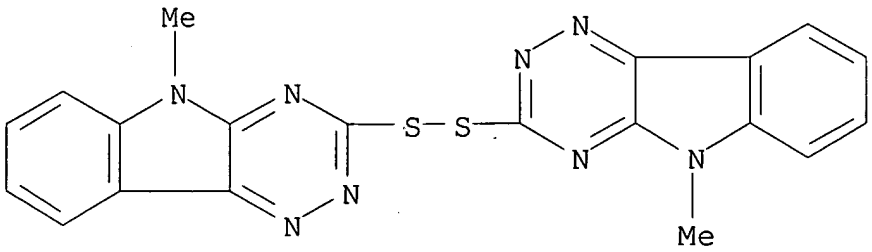
I

AB The reaction of 1,2,4-triazino[5,6-b]indole-3-thione (I) with TCNE afforded a disulfide, a tricyanovinylation product, and a thiazolotriazinoindole. 3-Aryl-5H-1,2,4-triazino[5,6-b]indoles reacted with TCNE to give 1,1,2,3,3-pentacyanopropene and 3-aminotriazinoindole derivs. 3-Hydrazino-5H-1,2,4-triazino[5,6-b]indoles (II) reacted with TCNE, dicyanomethylene-1,3-indandione, and 2,3-dicyano-1,4-naphthoquinone to form triazolotriazinoindoles and triazepinotriazinoindoles. The reaction of II with chlorinated quinones gave fused quinazolinetriones.

IT **22181-53-9P**
(prepn. of)

RN 22181-53-9 HCA

CN 5H-1,2,4-Triazino[5,6-b]indole, 3,3'-dithiobis[5-methyl- (9CI) (CA INDEX NAME)



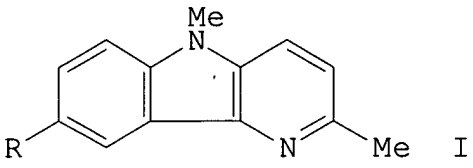
IT **22181-53-9P**
(prepn. of)

L14 ANSWER 12 OF 20 HCA COPYRIGHT 2007 ACS on STN

113:193433 2,5-Dimethylindolo[3,2-b]pyridines and polymethine dyes based

on them. Tokmakova, N. V.; Lyubich, M. S.; Lifshits, E. B. (Vses. Gos. Nauchno-Issled. Proektn. Inst. Khim.-Fotogr. Prom., Moscow, 125167, USSR). Khimiya Geterotsiklicheskikh Soedinenii (3), 391-5 (Russian) **1990**. CODEN: KGSSAQ. ISSN: 0453-8234. OTHER SOURCES: CASREACT 113:193433.

GI



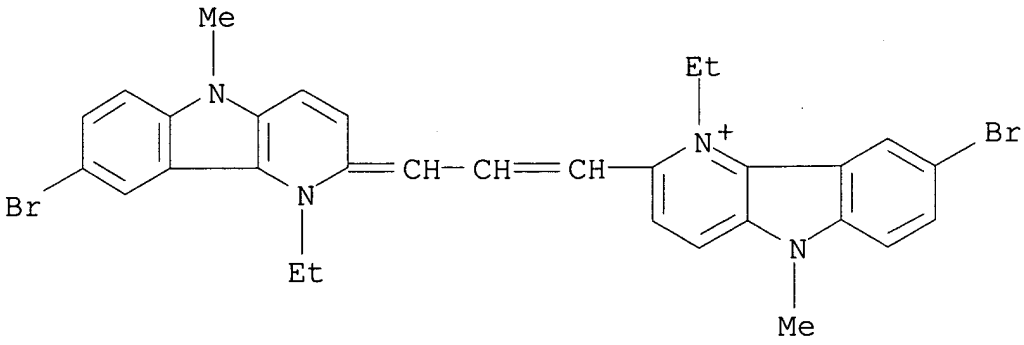
I

AB The title indolopyridines (I; R = H, Br), prepd. by methylating the corresponding 2-methylindolo[3,2-b]pyridines, were converted to the iodoethylates and 2-β-acetanilinovinyl derivs. Condensation of the iodoethylates with the acetanilinovinyl derivs. in DMSO in the presence of tert-BuOK gave sym. carbocyanines. The carbocyanines had a deeper color [absorption max. (λm) at 678, 686 nm] compared with sym. carbocyanines from benzothiopheno[2,3-b]pyridine (λm 648 nm) or from benzofurano[2,3-b]pyridine (λm 653 nm), indicating a higher conjugation of π-electrons in the pyrrole ring of the polymethine dyes than in the thiophene or furan ring.

IT **129601-37-2P 129622-80-6P**
(prepn. and spectral properties of)

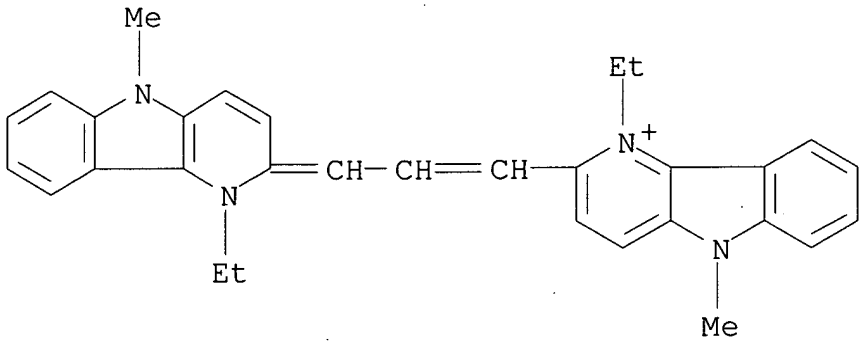
RN 129601-37-2 HCA

CN 5H-Pyrido[3,2-b]indolium, 8-bromo-2-[3-(8-bromo-1-ethyl-1,5-dihydro-5-methyl-2H-pyrido[3,2-b]indol-2-ylidene)-1-propenyl]-1-ethyl-5-methyl-, iodide (9CI) (CA INDEX NAME)



● I^-

RN 129622-80-6 HCA
CN 5H-Pyrido[3,2-b]indolium, 1-ethyl-2-[3-(1-ethyl-1,5-dihydro-5-methyl-2H-pyrido[3,2-b]indol-2-ylidene)-1-propenyl]-5-methyl-, iodide (9CI) (CA INDEX NAME)

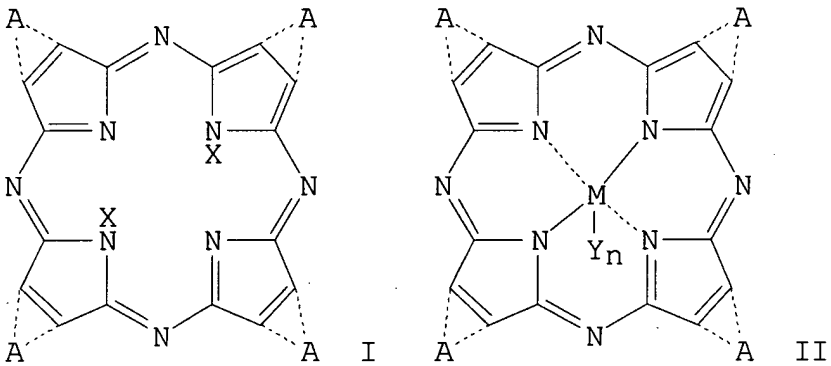


● I^-

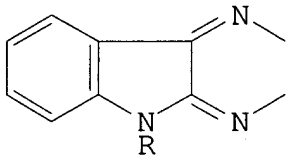
IT **129601-37-2P 129622-80-6P**
(prepn. and spectral properties of)

L14 ANSWER 13 OF 20 HCA COPYRIGHT 2007 ACS on STN
113:162474 Electrophotographic photoreceptor containing tetraazaporphyrin derivative or tetraazaporphrin metal salt derivative. Inai, Kazufumi; Anayama, Hideki (Canon K. K., Japan). Jpn. Kokai Tokkyo Koho JP 02035460 A **19900206** Heisei, 13 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1988-186307 19880725.

GI



I II



III

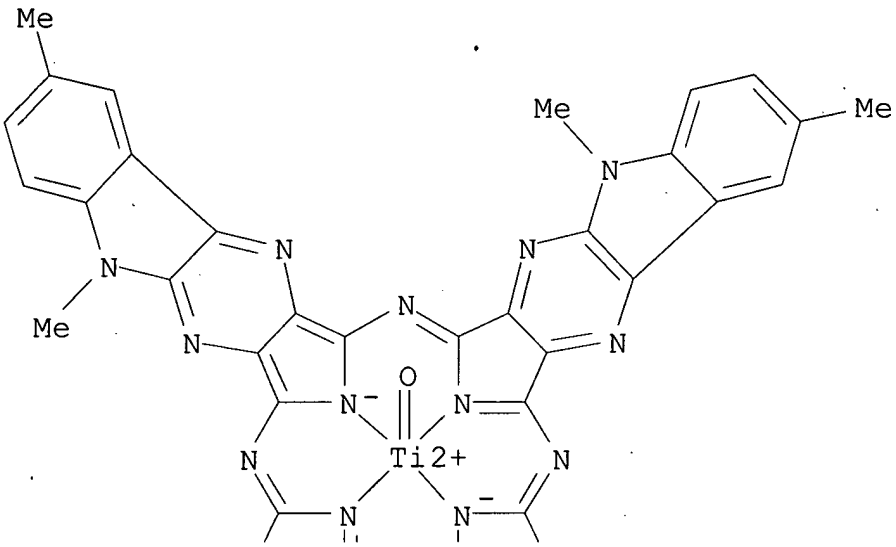
AB In the title photoreceptor, the photoconductive layer contains a tetraazaporphyrin deriv. I [X = H, D, alkali metal; A = III (R = H, alkyl)], or a tetraazaporphyrin metal complex salt II [M = a metal excluding Si and an alkali metal; Y = halogen, OH, alkoxy, O; n = 0-2]. The photoreceptor shows improved sensitivity and reduced residual potential.

IT **129523-24-6 129523-25-7 129764-71-2 129764-72-3**
(charge-generating material, electrophotog. photoreceptor using)

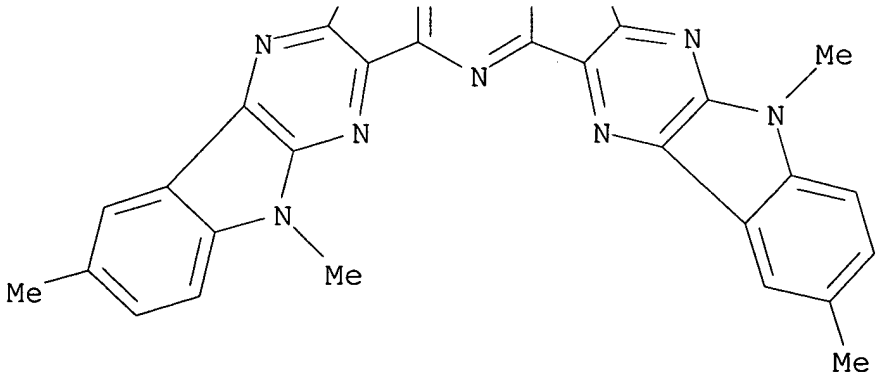
RN 129523-24-6 HCA

CN Titanium, [15,35-dihydro-2,5,12,15,22,25,32,35-octamethyl-5H,25H,41H,43H-tetrakisindolo[2',3':5,6]pyrazino[2,3-b:2',3'-g:2'',3''-l:2''',3'''-q]porphyrazinato(2-)-κN41,κN42,κN43,κN44]oxo-, (SP-5-12)- (9CI) (CA INDEX NAME)

PAGE 1-A



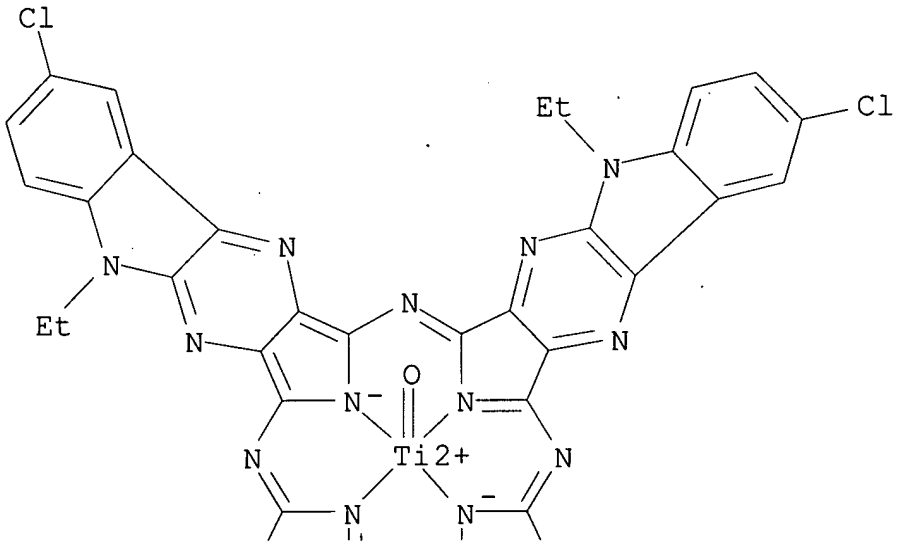
PAGE 2-A



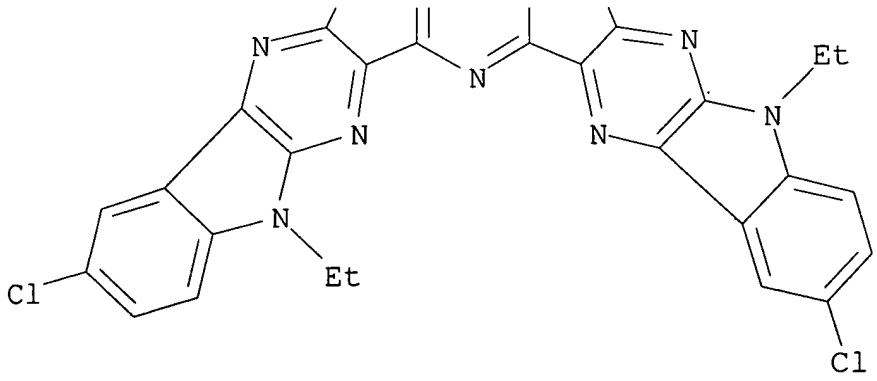
RN 129523-25-7 HCA
CN Titanium, oxo[2,12,22,32-tetrachloro-5,15,25,35-tetraethyl-15,35-dihydro-5H,25H,41H,43H-tetrakisindolo[2',3':5,6]pyrazino[2,3-b:2',3'-g:2'',3''-l:2''',3'''-q]porphyrazinato(2-)-

κN41,κN42,κN43,κN44]-, (SP-5-12)- (9CI) (CA INDEX NAME)

PAGE 1-A

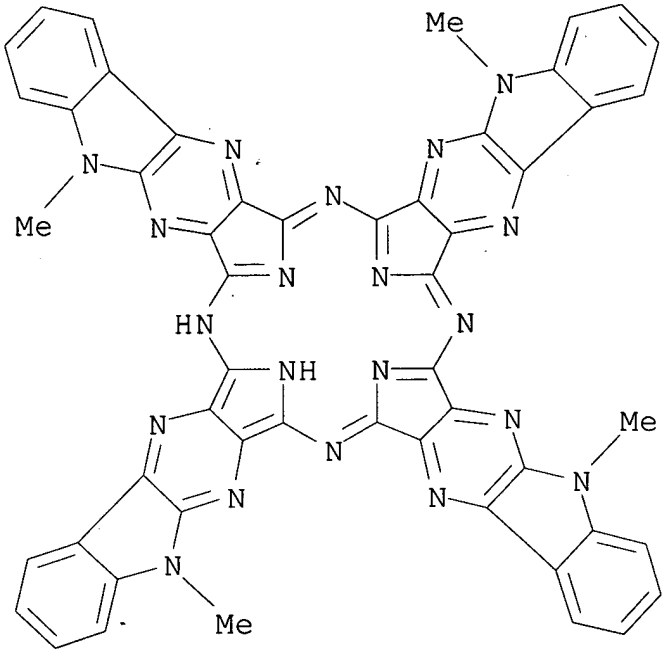


PAGE 2-A

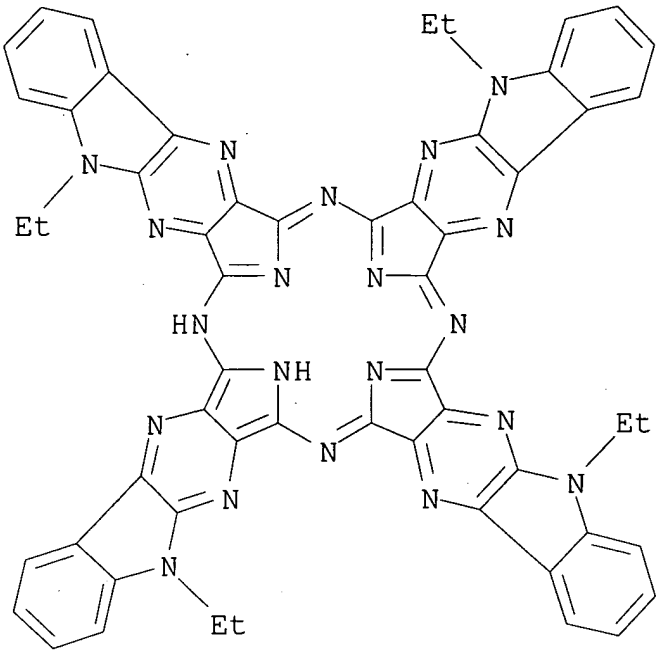


RN 129764-71-2 HCA

CN 5H,25H,41H,43H-Tetrakisindolo[2',3':5,6]pyrazino[2,3-b:2',3'-g:2'',3''-l:2''',3'''-q]porphyrazine, 15,35-dihydro-,5,15,25,35-tetramethyl- (9CI) (CA INDEX NAME)



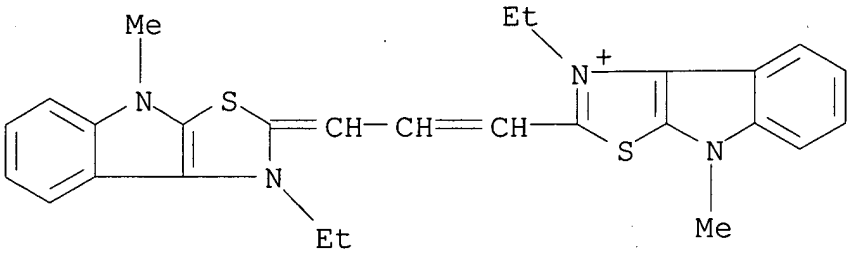
RN 129764-72-3 HCA
CN 5H,25H,41H,43H-Tetrakisindolo[2',3':5,6]pyrazino[2,3-b:2',3'-g:2'',3''-l:2''',3'''-q]porphyrazine, 5,15,25,35-tetraethyl-15,35-dihydro- (9CI) (CA INDEX NAME)



IT **129523-24-6 129523-25-7 129764-71-2**
129764-72-3
(charge-generating material, electrophotog. photoreceptor using)

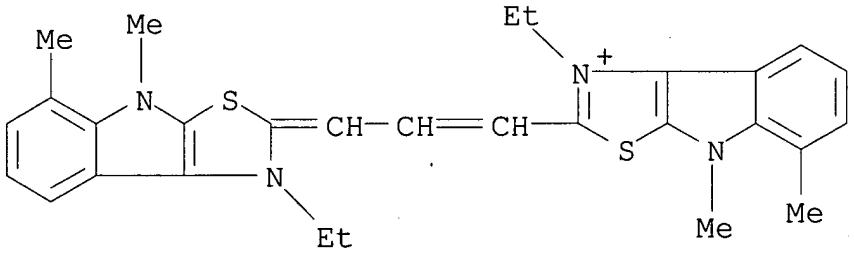
L14 ANSWER 14 OF 20 HCA COPYRIGHT 2007 ACS on STN
112:88000 Photographic properties of carbocyanine derivatives of indolo(3,2-d)thiazoles. Dzyubenko, V. G.; Abramenko, P. I.; Yashukova, L. N. (USSR). Zhurnal Nauchnoi i Prikladnoi Fotografii i Kinematografii, 34(5), 327-34 (Russian) **1989**. CODEN: ZNPFAG. ISSN: 0044-4561.
AB Photog. properties and polarog. characteristics were studied of polymethine dyes derived from new heterocyclic compds. indolo(3,2-d)thiazoles contg. different substituents in the fused benzene ring. For carboxyamines not substituted in the chain formation of H-aggregates with low photochem. activity on the emulsion microcrystals surface was characteristic. Mesoethyl-substituted trimethinecyanines and cationic-anionic dyes based on them had increased tendency of j-aggregation on the microcrystals surface and high sensitizing activity.
IT **87887-01-2 111395-60-9 111395-61-0**
111420-79-2 111420-80-5 111420-83-8
125306-51-6 125306-52-7
(photog. sensitizing properties of, in silver halide emulsions)
RN 87887-01-2 HCA
CN 4H-Thiazolo[5,4-b]indolium, 1-ethyl-2-[3-(1-ethyl-1,4-dihydro-4-methyl-2H-thiazolo[5,4-b]indol-2-ylidene)-1-propenyl]-4-methyl-,

iodide (9CI) (CA INDEX NAME)



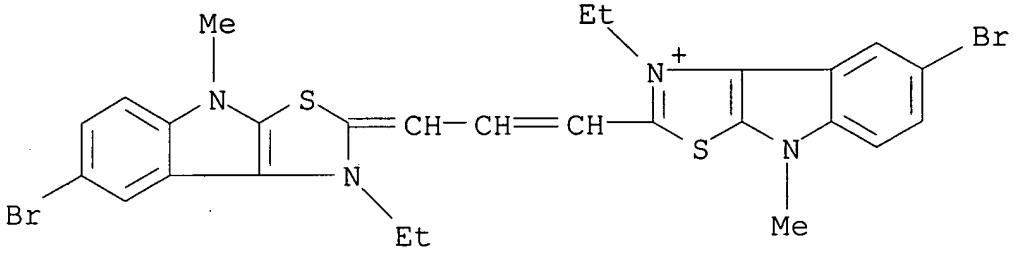
● I^-

RN 111395-60-9 HCA
CN 4H-Thiazolo[5,4-b]indolium, 1-ethyl-2-[3-(1-ethyl-1,4-dihydro-4,5-dimethyl-2H-thiazolo[5,4-b]indol-2-ylidene)-1-propenyl]-4,5-dimethyl-, iodide (9CI) (CA INDEX NAME)



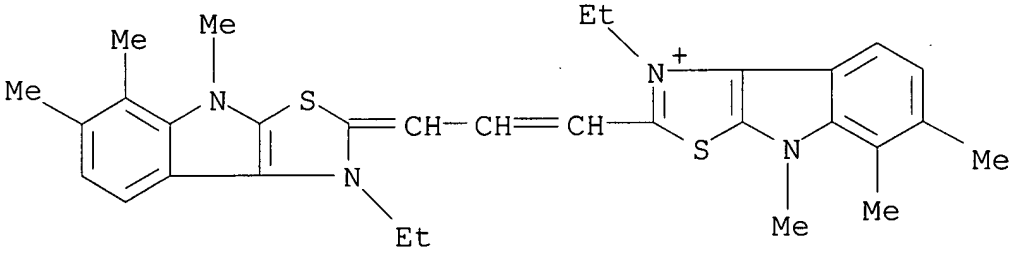
● I^-

RN 111395-61-0 HCA
CN 4H-Thiazolo[5,4-b]indolium, 7-bromo-2-[3-(7-bromo-1-ethyl-1,4-dihydro-4-methyl-2H-thiazolo[5,4-b]indol-2-ylidene)-1-propenyl]-1-ethyl-4-methyl-, iodide (9CI) (CA INDEX NAME)



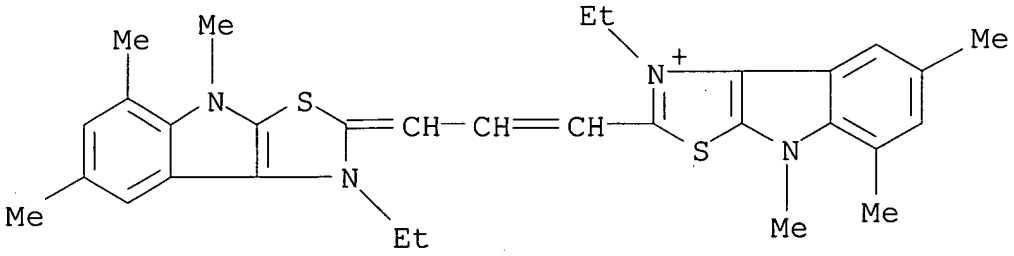
● I^-

RN 111420-79-2 HCA
CN 4H-Thiazolo[5,4-b]indolium, 1-ethyl-2-[3-(1-ethyl-1,4-dihydro-4,5,6-trimethyl-2H-thiazolo[5,4-b]indol-2-ylidene)-1-propenyl]-4,5,6-trimethyl-, iodide (9CI) (CA INDEX NAME)



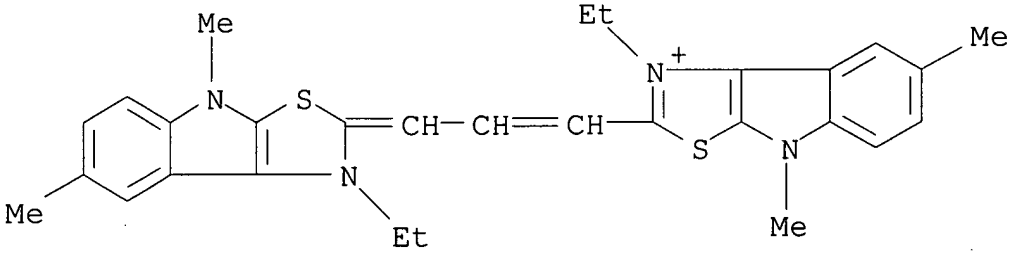
● I^-

RN 111420-80-5 HCA
CN 4H-Thiazolo[5,4-b]indolium, 1-ethyl-2-[3-(1-ethyl-1,4-dihydro-4,5,7-trimethyl-2H-thiazolo[5,4-b]indol-2-ylidene)-1-propenyl]-4,5,7-trimethyl-, iodide (9CI) (CA INDEX NAME)



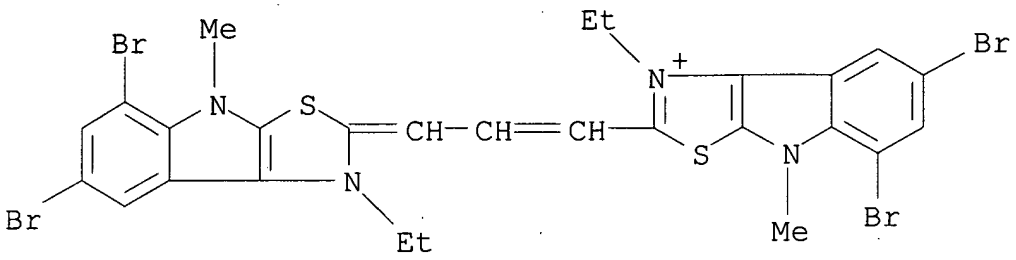
● I^-

RN 111420-83-8 HCA
CN 4H-Thiazolo[5,4-b]indolium, 1-ethyl-2-[3-(1-ethyl-1,4-dihydro-4,7-dimethyl-2H-thiazolo[5,4-b]indol-2-ylidene)-1-propenyl]-4,7-dimethyl-, iodide (9CI) (CA INDEX NAME)



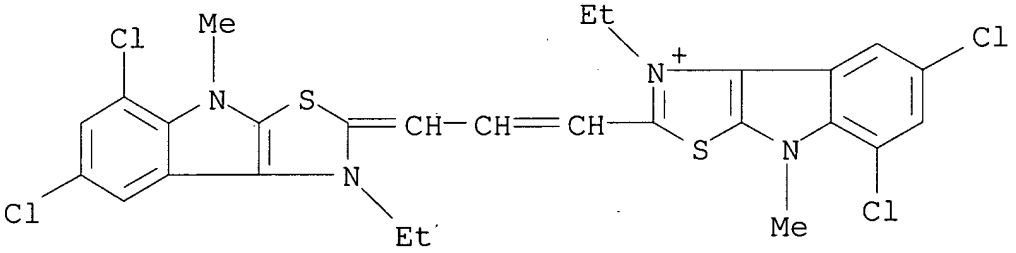
● I^-

RN 125306-51-6 HCA
CN 4H-Thiazolo[5,4-b]indolium, 5,7-dibromo-2-[3-(5,7-dibromo-1-ethyl-1,4-dihydro-4-methyl-2H-thiazolo[5,4-b]indol-2-ylidene)-1-propenyl]-1-ethyl-4-methyl-, iodide (9CI) (CA INDEX NAME)



● I^-

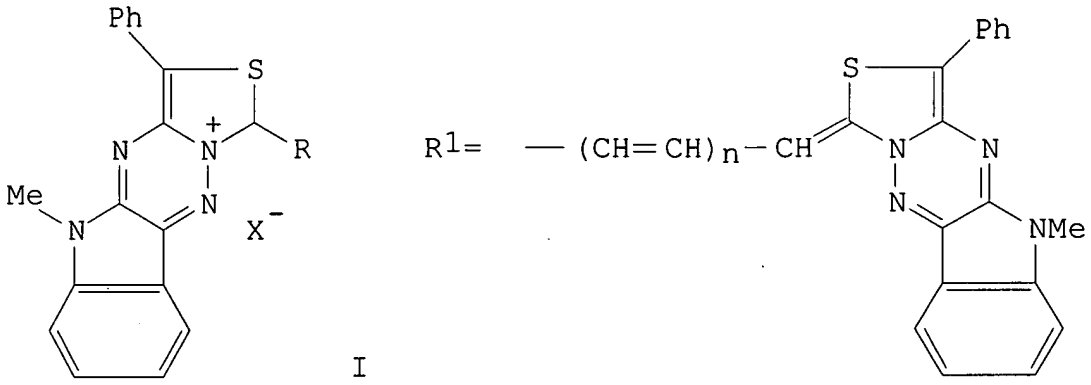
RN 125306-52-7 HCA
CN 4H-Thiazolo[5,4-b]indolium, 5,7-dichloro-2-[3-(5,7-dichloro-1-ethyl-1,4-dihydro-4-methyl-2H-thiazolo[4,5-b]indol-2-ylidene)-1-propenyl]-1-ethyl-4-methyl-, iodide (9CI) (CA INDEX NAME)



● I^-

IT **87887-01-2 111395-60-9 111395-61-0**
111420-79-2 111420-80-5 111420-83-8
125306-51-6 125306-52-7
(photog. sensitizing properties of, in silver halide emulsions)

L14 ANSWER 15 OF 20 HCA COPYRIGHT 2007 ACS on STN
110:175131 Polymethine dyes with a thiazolotriazinoindole nucleus. Kovtun, Yu. P.; Romanov, N. N. (Inst. Org. Khim., Kiev, 252660, USSR). Khimiya Geterotsiklicheskikh Soedinenii (11), 1547-51 (Russian) **1988**. CODEN: KGSSAQ. ISSN: 0453-8234. OTHER SOURCES: CASREACT 110:175131.
GI



I

AB The spectral properties of the title polymethine dyes (I; R = -(CH:CH)nN(OAc)Ph, R1; n = 0, 1, 2; X = ClO4-, tosylate) are examd. from the standpoint of chromophore interaction. Two absorption bands were obsd. for I, both of which underwent approx. equal bathochromic shifts with increasing n. The short-wavelength absorption decreased and the long-wavelength absorption increased in intensity with increasing n. The ring had an apparent length similar to that for thiazolotriazine, but the former had a higher degree of interaction of electron transitions.

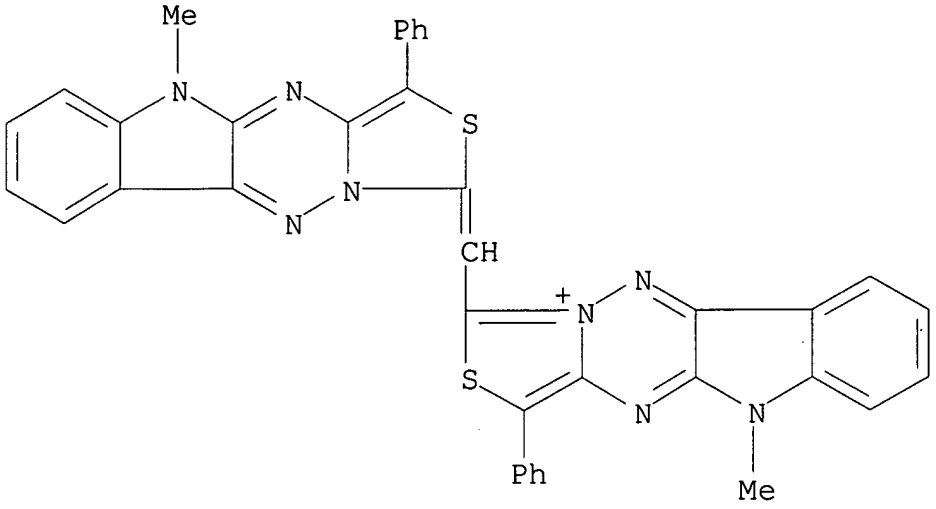
IT **120247-30-5 120247-32-7 120271-71-8**
(dye, chromophore interaction in, spectral properties in relation to)

RN 120247-30-5 HCA

CN 5H-Thiazolo[3',4':2,3][1,2,4]triazino[5,6-b]indol-11-ium, 5-methyl-1-[(5-methyl-3-phenyl-1H,5H-thiazolo[3',4':2,3][1,2,4]triazino[5,6-b]indol-1-ylidene)methyl]-3-phenyl-, perchlorate (9CI) (CA INDEX NAME)

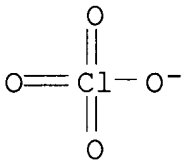
CM 1

CRN 120247-29-2
CMF C37 H25 N8 S2



CM 2

CRN 14797-73-0
CMF Cl O4



RN 120247-32-7 HCA
CN 5H-Thiazolo[3',4':2,3][1,2,4]triazino[5,6-b]indol-11-ium, 5-methyl-1-[5-(5-methyl-3-phenyl-1H,5H-thiazolo[3',4':2,3][1,2,4]triazino[5,6-b]indol-1-ylidene)-1,3-pentadienyl]-3-phenyl-, perchlorate (9CI) (CA INDEX NAME)

CM 1

CRN 120247-31-6
CMF C41 H29 N8 S2

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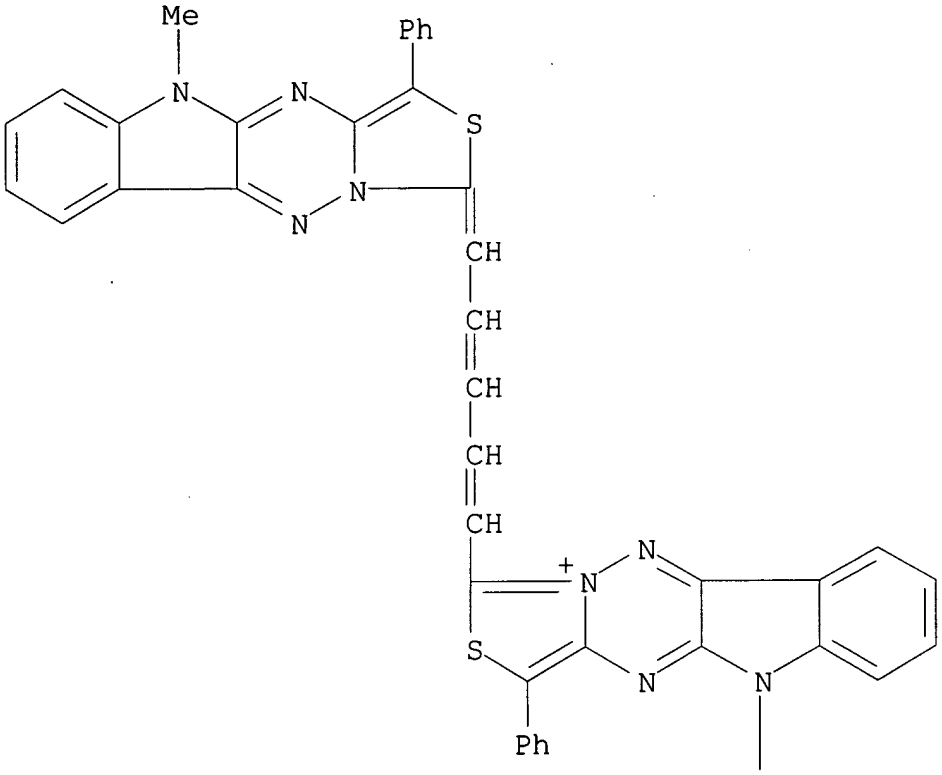
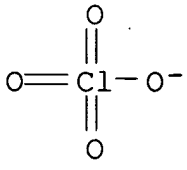


PAGE 2-A

CM 2

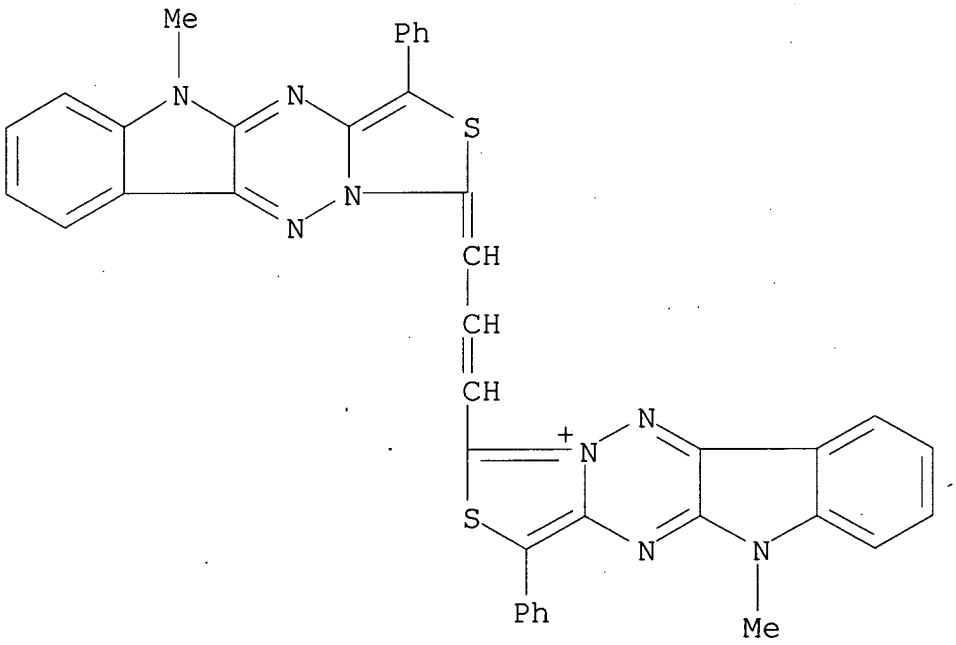
CRN 14797-73-0
CMF Cl O4



RN 120271-71-8 HCA
CN 5H-Thiazolo[3',4':2,3][1,2,4]triazino[5,6-b]indol-11-ium, 5-methyl-1-[3-(5-methyl-3-phenyl-1H,5H-thiazolo[3',4':2,3][1,2,4]triazino[5,6-b]indol-1-ylidene)-1-propenyl]-3-phenyl-, perchlorate (9CI) (CA INDEX NAME)

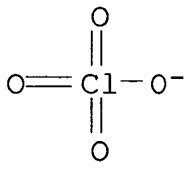
CM 1

CRN 120271-70-7
CMF C39 H27 N8 S2



CM 2

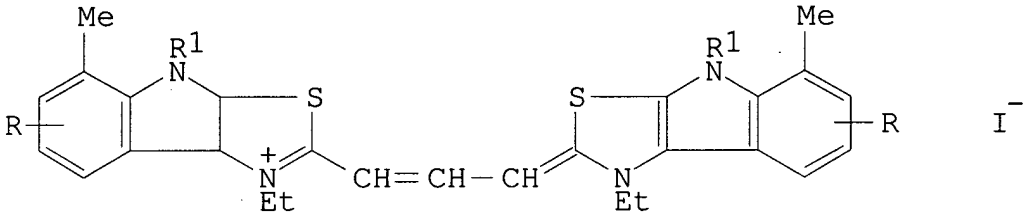
CRN 14797-73-0
CMF Cl O4



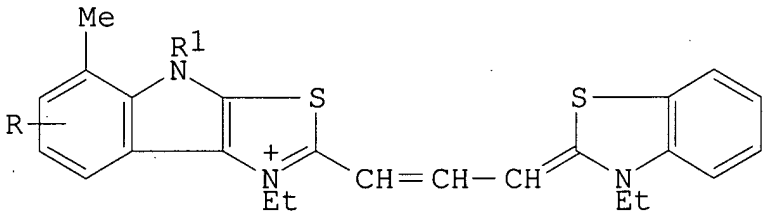
IT **120247-30-5 120247-32-7 120271-71-8**
(dye, chromophore interaction in, spectral properties in relation to)

L14 ANSWER 16 OF 20 HCA COPYRIGHT 2007 ACS on STN
107:219132 Tri- and tetraalkylindolo[3,2-d]thiazoles and their derivatives. Dzyubenko, V. G.; Abramenko, P. I. (Vses. Nauchno-Issled. Inst. Khim.-Fotogr. Prom., Moscow, USSR). Zhurnal Organicheskoi Khimii, 23(3), 631-7 (Russian) **1987**. CODEN: ZORKAE. ISSN: 0514-7492. OTHER SOURCES: CASREACT 107:219132.

GI



I



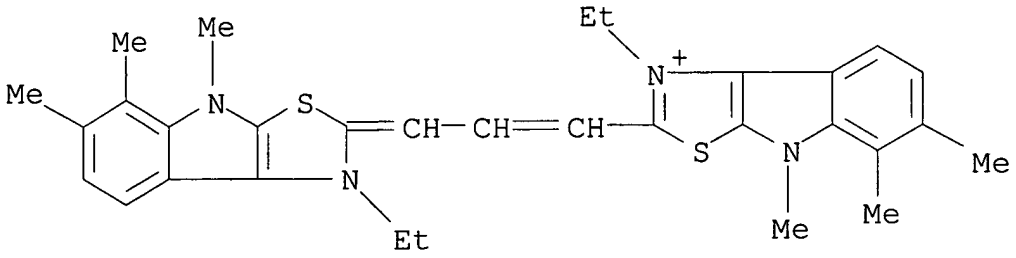
II

AB Polymethine dyes I (R = Me, Br; R1 = H, Me) and II were prepd. as prospective photog. sensitizers from tri- and tetramethylindolo[3,2-d]thiazoles by conversion to the quaternary salts and anilinovinyl derivs. for condensation with the appropriate heterocyclic compd. Me groups in the 5, 7, and 8 positions in I shifted the absorption spectra somewhat toward longer wavelengths, compared with unsubstituted analogs or I with Me groups in the 4 and 6 positions. A Br atom in the 5 position caused a hypsochromic shift.

IT **111420-79-2P 111420-80-5P 111420-81-6P**
(prepn. and properties of, for photog. sensitizers)

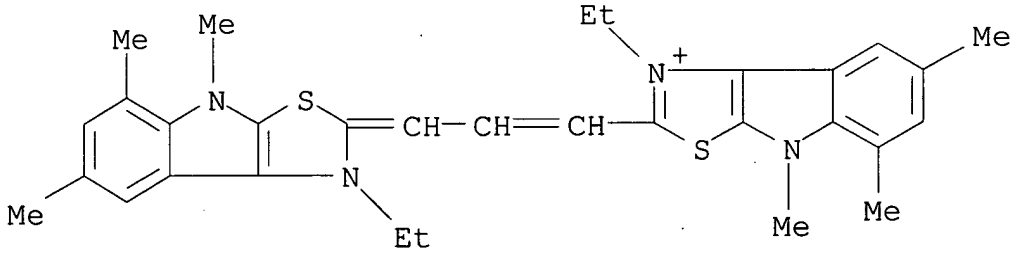
RN 111420-79-2 HCA

CN 4H-Thiazolo[5,4-b]indolium, 1-ethyl-2-[3-(1-ethyl-1,4-dihydro-4,5,6-trimethyl-2H-thiazolo[5,4-b]indol-2-ylidene)-1-propenyl]-4,5,6-trimethyl-, iodide (9CI) (CA INDEX NAME)



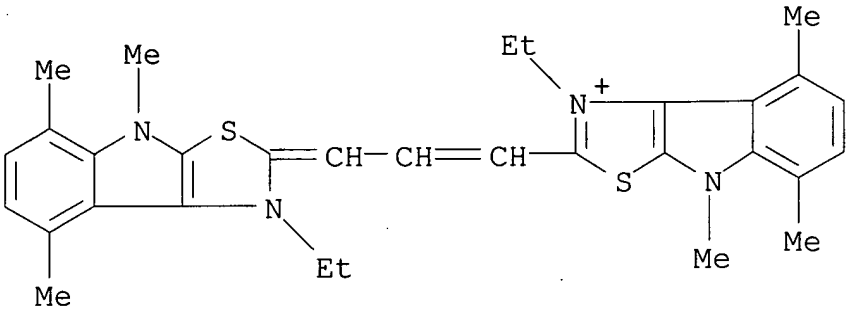
● I^-

RN 111420-80-5 HCA
CN 4H-Thiazolo[5,4-b]indolium, 1-ethyl-2-[3-(1-ethyl-1,4-dihydro-4,5,7-trimethyl-2H-thiazolo[5,4-b]indol-2-ylidene)-1-propenyl]-4,5,7-trimethyl-, iodide (9CI) (CA INDEX NAME)



● I^-

RN 111420-81-6 HCA
CN 4H-Thiazolo[5,4-b]indolium, 1-ethyl-2-[3-(1-ethyl-1,4-dihydro-4,5,8-trimethyl-2H-thiazolo[5,4-b]indol-2-ylidene)-1-propenyl]-, iodide (9CI) (CA INDEX NAME)

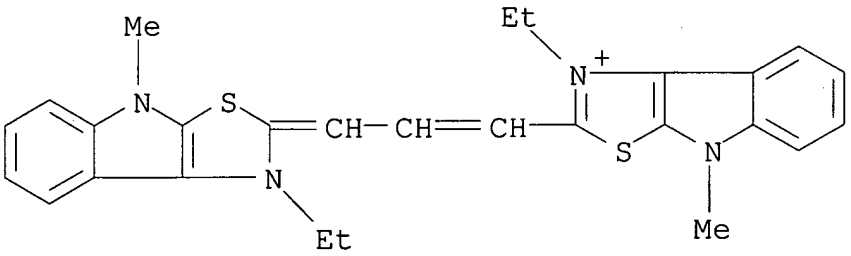


● I^-

IT **87887-01-2 111395-60-9 111395-61-0 111420-83-8**
(spectral properties of, for photog. sensitizers)

RN 87887-01-2 HCA

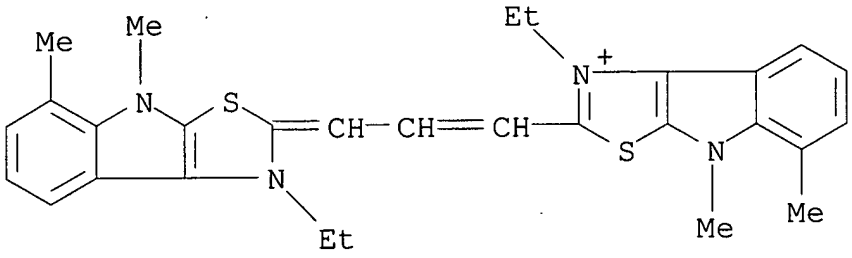
CN 4H-Thiazolo[5,4-b]indolium, 1-ethyl-2-[3-(1-ethyl-1,4-dihydro-4-methyl-2H-thiazolo[5,4-b]indol-2-ylidene)-1-propenyl]-4-methyl-, iodide (9CI) (CA INDEX NAME)



● I^-

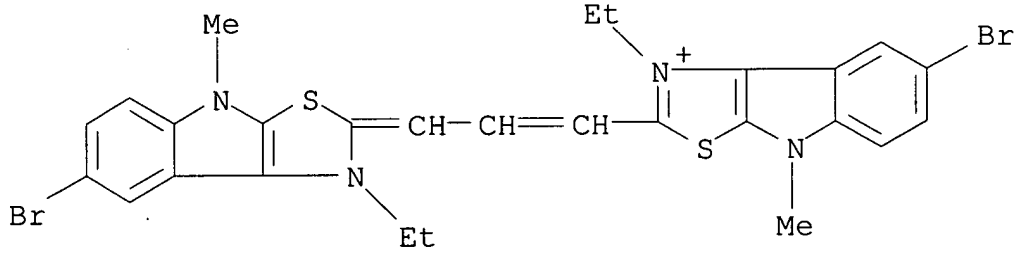
RN 111395-60-9 HCA

CN 4H-Thiazolo[5,4-b]indolium, 1-ethyl-2-[3-(1-ethyl-1,4-dihydro-4,5-dimethyl-2H-thiazolo[5,4-b]indol-2-ylidene)-1-propenyl]-4,5-dimethyl-, iodide (9CI) (CA INDEX NAME)



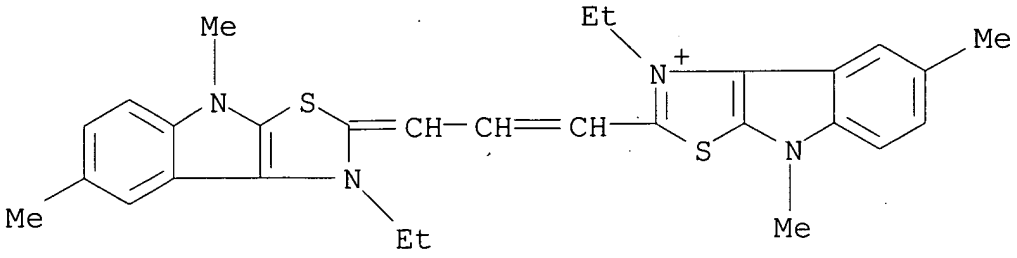
● I^-

RN 111395-61-0 HCA
CN 4H-Thiazolo[5,4-b]indolium, 7-bromo-2-[3-(7-bromo-1-ethyl-1,4-dihydro-4-methyl-2H-thiazolo[5,4-b]indol-2-ylidene)-1-propenyl]-1-ethyl-4-methyl-, iodide (9CI) (CA INDEX NAME)



● I^-

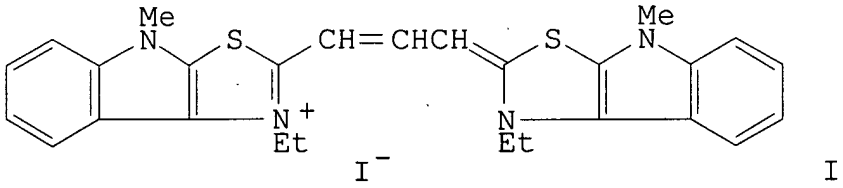
RN 111420-83-8 HCA
CN 4H-Thiazolo[5,4-b]indolium, 1-ethyl-2-[3-(1-ethyl-1,4-dihydro-4,7-dimethyl-2H-thiazolo[5,4-b]indol-2-ylidene)-1-propenyl]-4,7-dimethyl-, iodide (9CI) (CA INDEX NAME)



● I^-

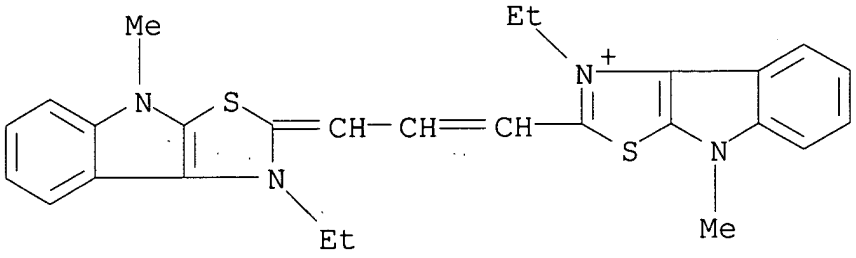
IT **111420-79-2P 111420-80-5P 111420-81-6P**
(prepn. and properties of, for photog. sensitizers)
IT **87887-01-2 111395-60-9 111395-61-0**
111420-83-8
(spectral properties of, for photog. sensitizers)

L14 ANSWER 17 OF 20 HCA COPYRIGHT 2007 ACS on STN
99:214137 Polymethine dyes - derivatives of 8-alkylindolo[3,2-d]thiazoles. Abramenko, P. I.; Ponomareva, T. K. (Vses. Gos. Nauchno-Issled. Proektn. Inst. Khim.-Fotogr. Prom., USSR). Zhurnal Vsesoyuznogo Khimicheskogo Obshchestva im. D. I. Mendeleeva, 28(4), 475-7 (Russian) **1983**. CODEN: ZVKOA6. ISSN: 0373-0247.
GI



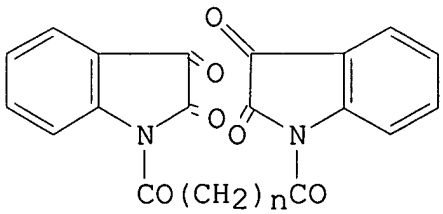
AB The sym. cyanine I [**87887-01-2**] (λmax 637 nm) and 10 unsym. cyanines with the indolothiazole nucleus (some meso-substituted), as well as a monomethine, a merocyanine, and 2 styryl derivs., were prepd. by conventional means. The basicity of the indolo[3,2-d]thiazole nucleus is greater than that of the naphtho[1,2-d]thiazole or thionaphtheno[2,3-d]thiazole nucleus. Halogen substitution on the indolo[3,2-d]thiazole nucleus decreases the sensitizing efficiency toward Ag halide emulsions, but Me substituents increase it.

IT **87887-01-2P**
(prepn. and visible absorption of)
RN 87887-01-2 HCA
CN 4H-Thiazolo[5,4-b]indolium, 1-ethyl-2-[3-(1-ethyl-1,4-dihydro-4-methyl-2H-thiazolo[5,4-b]indol-2-ylidene)-1-propenyl]-4-methyl-, iodide (9CI) (CA INDEX NAME)



IT **87887-01-2P**
(prepn. and visible absorption of)

L14 ANSWER 18 OF 20 HCA COPYRIGHT 2007 ACS on STN
98:143360 Mannich bases with the dipiperidinic structure and having pharmacological activity. Collino, F.; Volpe, S. (Fac. Farm., Univ. Trieste, Trieste, Italy). Bollettino Chimico Farmaceutico, 121(8), 408-20 (Italian) **1982**. CODEN: BCFAAI. ISSN: 0006-6648.
OTHER SOURCES: CASREACT 98:143360.
GI



I

AB Mannich bases (28 compds.) of N heterocycles or arom. amines with trimethylenedipiperidine, dipiperidine, and hydroxyethyldipiperidine were prepd. as well as the isatin derivs. I (n = 6, 7). Several of the Mannich bases had fibrinolytic activity of 5 mg/kg i.p. in mice.

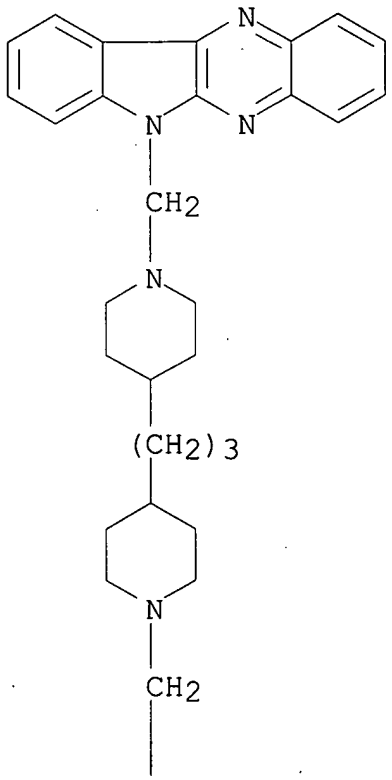
Muscle relaxant, antiallergic, antihistaminic, immunosuppressant, and antithrombic activities were also found. I (n = 6) inhibited cyclic AMP phosphodiesterase and I (n = 7) had antihistaminic activity.

IT **85122-91-4P**
(prepn. of)

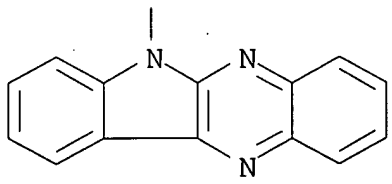
RN 85122-91-4 HCA

CN 6H-Indolo[2,3-b]quinoxaline, 6,6'-[1,3-propanediylbis(4,1-piperidinediylmethylene)]bis- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



IT **85122-91-4P**
(prepn. of)

L14 ANSWER 19 OF 20 HCA COPYRIGHT 2007 ACS on STN
72:134123 2-Methylindolo[3,2-b]thiazolo[4,5-f]quinoxalines and cyanine dyes made from them. Rozum, Yu. S.; Shul'ga, S. I. (Kiev. Tekhnol. Inst. Pishch. Prom., Kiev, USSR). Khim. Str., Svoistva Reaktivnost Org. Soedin., 35-8. Editor(s): Kuprianov, A. I. Izd. "Naukova Dumka": Kiev, USSR. (Russian) **1969**. CODEN: 17JAAD.

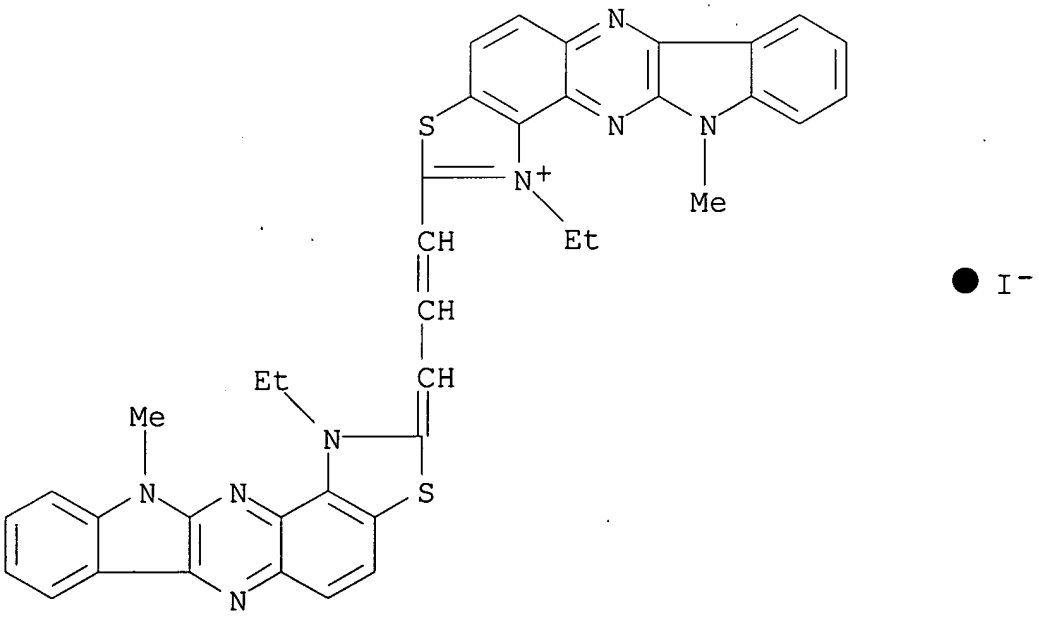
GI For diagram(s), see printed CA Issue.

AB Isatin and 2-methyl-4,5-diaminobenzothiazole in boiling HOAc formed 2-methylindolo[3,2-b]thiazolo[4,5-f]quinoxaline (I, R = R1 = H), m. >310°, λmax 283 and 362 nm; EtI salt m. 246-8° (EtOH). I (R = Me, R1 = H), m. >310° (EtI salt m. 226-8°), and I (R = H, R1 = NO2), m. >310° (EtI salt m. 232-5°), were prepd. similarly. The assignment of this structure is based on the belief that the reagents react first at the more electrophilic β-carbonyl group and the more nucle ophilic amino group. The tabulated cyanine dyes of structure II were prepd. from I. EtI.

IT **26976-03-4P**
(prepn. of)

RN 26976-03-4 HCA

CN 11H-Indolo[3,2-b]thiazolo[4,5-f]quinoxalinium, 1-ethyl-2-[3-(1-ethyl-1,11-dihydro-11-methyl-2H-indolo[3,2-b]thiazolo[4,5-f]quinoxalin-2-ylidene)propenyl]-11-methyl-, iodide (8CI) (CA INDEX NAME)



IT **26976-03-4P**